

# Amazing COMPUTING™ / *For The Commodore* **AMIGA®**

*Your Original AMIGA® Monthly Resource*

Volume 6 No. 8 August 1991  
US \$3.95 Canada \$4.95  
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## VIDEO SPECTACULAR

**JBTv in Chicago**  
**Super 8 Meets *AMIGA***  
**Understanding Genlocks**  
**Time Base Correctors**

### REVIEWS—

- B.A.D.
- Using LightWave 3D
- AlterImage Video F/X
- ChromaKey

### HARDWARE PROJECT—

- Sonar Ranging System
- Multi-Joystick Adapter



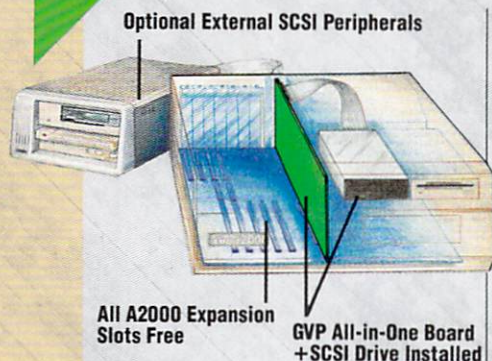


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RAM upgrades through easy-to-install 32-bit wide SIMM memory modules	Y	N	N

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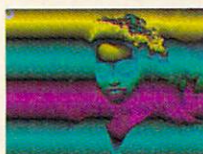


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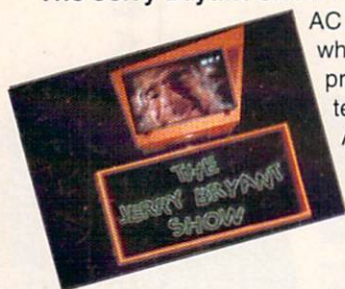
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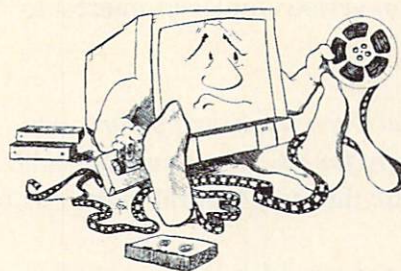
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# ATTENTION FREELANCE WRITERS: *AMAZING COMPUTING* WANTS YOU

Did you know that every issue of *Amazing Computing* contains articles that were submitted by Amiga users like yourself? Each issue contains unique and informative articles on various topics of interest to Amiga users.

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### SPECIAL THANKS TO:

Buddy Terrell & Byrd Press  
Bob at Riverside Art, Ltd.  
Swansea One Hour Photo  
Pride Offset, Warwick, RI  
Printers' Service & Supply, Inc.  
Mach 1 Photo

Amazing Computing For The Commodore Amiga™ (ISSN 0886-9480) is published monthly by PIM Publications, Inc., Carrant Road, P.O. Box 869, Fall River, MA 02722-0869.

Subscriptions: In the U.S., 12 issues for \$24.00; in Canada & Mexico surface, \$34.00; foreign surface for \$44.00.

Second-Class Postage paid at Fall River, MA 02722 and additional mailing offices.

**POSTMASTER:** Send address changes to PIM Publications Inc., P.O. Box 869, Fall River, MA 02722-0869. Printed in the U.S.A. Copyright© June 1991 by PIM Publications, Inc. All rights reserved.

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# EDITORIAL CONTENT

## **JERRY BRYANT, AMIGA, AND YOU**

IN THIS ISSUE, AC is once again celebrating the Amiga's unique abilities in video production. A year ago, we were lucky enough to introduce our readers to Frank McMahon's long-time association with the Amiga and video in a cable television production environment. That was before the official introduction of NewTek's Video Toaster.

The Video Toaster has now been available in quantity for approximately nine months and stories are beginning to spread of all the individuals and organizations who have taken the Amiga and its video capability to higher ground. From music videos by Todd Rundgren to the production rooms of Paramount's "Star Trek: The Next Generation," NewTek executives have reported scoring major changes in the perception of the Amiga.

Now, Jerry Bryant has traded the luxury of a multi-million dollar studio for the ease of his corner apartment on the twenty-eighth floor of a Chicago high rise overlooking the city. Jerry is producing one hour of commercial television as well as three hours of cable access television by using the Amiga for on-line editing. He has found the Amiga useful even in producing early comprehensive shots for his growing list of television commercial clients. Jerry has accomplished this transformation while owning the Amiga for fewer than four months.

There is no argument. The Amiga has changed the way professionals and "prosumers" are looking at the world. As the Amiga gains more acceptance and is seen in ever-growing quantity in the video area, I expect to see even more innovative products developed and more exciting ways in which they are used.

As Amiga users become accustomed to the technology, they will find even more ways to utilize it. They will begin to place more demands on the

Amiga's abilities. They will stretch the concepts and create a demand for better products. Amiga developers will be able to either follow or create the demand with their own innovations. The entire Amiga market will grow, because developers have access to the technology and have a way to build on what they experience.

## **LEARNING AS A PROCESS**

This isn't surprising. It is considered a fact by educators that we all learn by play and experimentation. As children, we are introduced into the world of thought and simple motor skills by manipulating the things in our world. Every mother knows this, but if you have been away from young children for a while, watch a baby's complete concentration as he looks at his hands or examines a toy.

Individual intellectual growth is easy to observe, but it is not so easy to see this same growth in a society. I believe that a society grows similarly to a child. People experiment with their world and their tools. They expand their understanding by extending their world. Through the interaction with each other and the world around them, they have the ability to build their knowledge and their capabilities.

For better or worse, this is how the industrial revolution has spawned the world we live in today. By stressing ways to increase productivity, we have created a world that has better medical and social standards. Nothing is unrelated. Our growth as a race is predicated on our ability to share knowledge and extend our collective reach.

Of course not all knowledge is so cheerfully shared. Corporations have spent millions to secure whatever advantage they have created in their laboratories. Nations defend their secrets from other nations with a fearful grip. While all of this can make sense on a competitive plane, it falls short when seen as a consumer activity.

## **WORLD KNOWLEDGE**

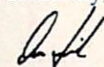
Today we have reached a situation where it is extremely important for all of us to have access to and knowledge of the entire world market. I know that a full global market raises more questions and concerns than I can address in a few short paragraphs. However, without access to growing technology for everyone, some areas of our world will always be held back. They will not have the opportunity to experiment with or extend our technological boundaries to the benefit of us all.

This is why AC continues to search for people who are doing remarkable things with their Amigas. It's hope that through the successes (and sometimes failures of others), we have the opportunity to conceive new ideas.

Jerry Bryant was very new to the Amiga. He saw his first *Amazing Computing* at the Consumer Electronics Show in Chicago (see Part 1 of our coverage in AC's July issue and Part 2 in this issue). He called me on Monday, June 3, 1991, to tell me about his success. I had already planned a second trip to Chicago for the final day of CES, so I made an appointment for the next day. In a quick photo session and a follow-up phone interview, we were able to report the success of Jerry and his team at his studio, JBTv.

But JBTv is only one of the great success stories being made every day with the Amiga. We want to report on more successful Amigans so we will all expand our concepts of the Amiga. If you have a story to tell, contact us today. Sharing your story will get you more than your name in the magazine. It will give you the satisfaction of knowing that you have extended the Amiga a little farther for all of us.

Sincerely,



Don Hicks  
Managing Editor



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in IFF picture format (HAM also supported), allowing custom backgrounds to be easily created and added.

**Symbols.** Scala includes many useful presentation symbols such as, male, female, arrows, vehicles, etc. Symbols are stored as IFF brushes, allowing custom symbols (or other objects) to be easily created and added.

**Typography.** Scala includes SEVENTEEN fonts, each of which is available in many different sizes and weights.



Special effects such as tilting, underline, drop shadow, 3D and color can be applied to any individual letter, word or line. The video enthusiast will find several typefaces especially suitable for video titling purposes.

**Transitions.** Scala offers more than SEVENTY special effects transitions for control of transitions between pages of a presentation and how and when text, symbols or objects appear on a page. These transitions allow you to soften or accentuate changes and liven up your presentations. The speed of any transition and display times can be fully controlled.



**Animations.** Scala is able to load and play back animations at any point within a presentation. Text can be added and super-imposed on an animation while it is being played back.

**Output.** Transferring output to different media is no problem with a duo like Scala and the Amiga. Using well-known Amiga tools, presentations can be genlocked, recorded on video tape, printed on polaroids, etc. Scala includes ScalaPrint which can print out a complete presentation or just a cue for your speech. PostScript printers are supported.

**Other Features.** Page layout and attributes can be saved and re-used later to ensure a consistent appearance within a presentation. ASCII files can be loaded and formatted onto these pre-defined layouts. Any object or part of a screen can be defined as a "button", allowing "run-time" selectable flow of presentations by the simple click of a mouse button. Mouse buttons act as a "remote control", allowing forward and backward control of the presentation or overriding display times.

### **SCALA, Sophisticated yet Easy-to-use**



Scala represents a new generation in Amiga software due to its excellent user-interface and smooth performance. All Scala's features are accessible through three, clear and easy-to-use menus labeled in plain English. Scala is shipped with a comprehensive manual and EIGHT DISKS! MINIMUM CONFIGURATION. Scala requires Kickstart V1.3 (or later), at least 1MB of memory and a hard disk. Separate versions for PAL and NTSC.

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# new products

## & other neat stuff

### **GALAXIES AND OTHER WORLDS**

**Galaxies and Other Worlds** is a companion set to *Earth and Planets*, Digital Designs' first set, released in April 1991. *Galaxies and Other Worlds* expands on the first set with more spectacular images from the far reaches of space. It contains detailed how-to instructions for creating imaginary space-scapes using the *Earth and Planets* disk set. It also provides a beautiful collection of renderings of space-scapes created with the outlined techniques.

Another new feature from Digital Designs, **Magic Palettes**, allows one-step palette changes without resorting to the old two-step method of loading a brush file and then using brush palette. Magic palettes are compatible with *DeluxePaint III*, *TV Text Professional*, *SCALA* and other graphics software. Another new feature, *Shade Me* graphics, are backgrounds set up to utilize the shade mode in *DeluxePaint III* to obtain realistic multi-color shadows for text and logos. Palettes' new construction set provides users with artwork ready to pick up as a brush and stamps down to custom assemble professional-looking flow diagrams, charts, characters, and other graphics. *Suggested retail price: \$39.95 each item. Digital Designs Group, P.O. Box 593, Whiteville, NC 28472, (919) 642-6295. Inquiry #202.*

### **SPACE ACE II: BORF'S REVENGE**

Featuring full screen animation and digitized sound, **Borf's Revenge** brings the classic animation style of Don Bluth to the

computer format. **Space Ace II** begins where *Space Ace I* left off—in the space ship of the evil commander Borf with Borf having been just turned into a baby by our hero Ace. But just when you thought Earth was safe from the evil commander, his little henchmen, the Goons, have blasted Borf a second time with the *Infanto Ray*, bringing him back to his full age. Lead Ace through battles with the Goons and other of Borf's allies until you must ultimately do battle with the evil commander himself. *Suggested retail price: \$59.95. Borf's Revenge, ReadySoft, 30 Wertheim Court, Unit 2, Richmond Hill, Ontario, Canada L4B 1B9. Inquiry #203.*

### **GUY SPY**

Being the world's greatest counter-espionage agent, you, **Guy Spy**, have been chosen to carry out your government's most important orders—destroy the doomsday machine of the evil Von Max. You have very little to go on, other than the knowledge that Von Max is currently located in Berlin. If you don't get there quickly, he will surely be on his way to collect the fabled crystals that he needs to tap into an immense power source. Intelligence reports have linked Von Max to a terrorist group that would love to hold the worlds for ransom with the power locked in the crystals. Your orders are to stop Von Max, at any cost, before it's too late. **Guy Spy** features cartoon animation with full control over animated characters. *Suggested retail price: \$59.95. ReadySoft, 30 Wertheim Court, Unit 2, Richmond Hill, Ontario, Canada L4B 1B9 Inquiry #204.*

### **DIGITAL DUNGEON**

The **Digital Dungeon** is designed to eliminate the need for lead figures and maps in role playing games by duplicating the functions of those aids while adding all of the features and options.

The program offers a 64-color bird's-eye view of combat scenes. Each player and character is represented by an animated figure that can be controlled by the keyboard or joystick. The background graphics may be drawn by the referee or chosen from an included source. The game offers statistics on each character, a random dye generator, and extensive manipulation of vision, including overall luminosity, torch and light pattern effects, infravision, and perspective view.

**Digital Dungeon** offers support for most gaming programs. It is designed around the idea that there are many things in common between gaming systems and that these similar events are the major blocks of the effort. *Suggested retail price: \$39.95. Magic Matrix, Station A, P.O. Box 2406, Champaign, IL 61825-2406. Inquiry #205.*

### **STARFLIGHT**

**Starflight** is a fantasy role-playing adventure that opens the doors of the imagination to an enormous galaxy of 270 star systems and 800 planets. There are over 1.9 million unique places to be explored per planet and over 1.5 billion locations throughout the galaxy.

The year is 4619 and your mission is to find colonizable worlds, gather ancient artifacts and minerals, and learn the secrets of alien races. As commander of an interstellar spaceship, players train a crew of up to six members from five alien species: humans, androids, insect-like Velox, reptilian Thrynn, and Elowan, a race of intelligent plants. Each species has unique abilities that suit them to a specific task.

A built in fractal generator treats players to a beautiful color animation that brings unprecedented realism to rotating planets and landing sequences. The text is intricate, intelligent, and

humorous. *Suggested retail price: \$49.95. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (800) 245-4525. Inquiry #206.*

### **INDIANAPOLIS 500: THE SIMULATION**

Based on the classic **Indianapolis 500 Race**, the program captures the excitement, appeal, and competition generated by the world's fastest cars and drivers. Players compete against a field of 32 other cars in races ranging from 10 laps to 200 laps. You can also practice before the race, enter the qualifying rounds, or try for the pole position. Eight different systems on the car can be adjusted and saved to disk for later use. Another option allows players to choose from one of three teams that have the settings pre-adjusted for skill levels.

**Indianapolis 500** takes full advantage of the Amiga's sound capabilities, with realistic engine, skid, and collision sounds. Team cars feature different dashboards, instruments, and engine characteristics. Accidents on the course create special effects and can be seen from multiple angles using *Instant Replay*. Select from six different views that last 20 seconds of action. You can also store the instant replay. Polygon 3-D graphics accurately render pit row, grand stands, the pole, and of course, the cars. *Suggested retail price: \$49.95. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (800) 245-4525. Inquiry #207.*

### **F-16 COMBAT PILOT**

**F-16 Combat Pilot** allows players to take to the skies flying an F-16 Fighting Falcon to engage enemy fighters and attack critical ground targets. Players must master five basic missions to become a squadron commander. Once all five missions have been completed successfully, players may undertake *Operation Conquest*, the final scenario. If they complete *Operation Conquest* successfully, players are "promoted" to a more elite squadron. Each "promotion" becomes more and more difficult to obtain. There are nine levels in all.

F-16 contains the most advanced weapons and aircraft



support systems available. Use Maverick-guided missiles to destroy enemy tanks, iron bombs to destroy air fields and radar stations, and air-to-air missiles to clear the enemy planes from the sky. There are more than 500 fixed and mobile targets spread over thousands of square miles in every mission. *Suggested retail price: \$49.95. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (800) 245-4525. Inquiry #208.*

### BILLY THE KID

**Billy the Kid** is a one- or two-player action strategy game set in the Wild West. Players assume the identity of Billy the Kid, the gun-toting desperado with a heart of gold, or his ex-best friend, Pat Garrett, the sharp-shooting sheriff and law-abiding pillar of the community.

Complete with digitized sound effects and a soundtrack which includes a half hour of MIDI music, Billy the Kid draws on all the major themes associated with a Western and blends them together for an interesting experience. *Suggested retail price: \$39.95. Electronic Arts, 1820 Gateway Drive, San Mateo, CA 94404, (800) 245-4525. Inquiry #209.*

### LOOM

**Loom** is a fantasy adventure game which completely avoids the use of text commands and relies on icons and music for its user interface. The hero, as Bobbin, travels in search of the Elders of the Guild of Weavers. Bobbin plays a pivotal role in this conflict between good and evil. He must search for clues to find and save the Elders and return them to his village.

Find the Weaver's "magic" distaff. It is the key to Loom's interface. Divided into eight sections, each related to a musical note, the distaff both detects and weaves magical spells. Spells are cast by learning and playing certain sequences of musical notes. Loom is different from the usual fantasy games. Highly detailed graphics and digitized sound as well as a thirty-minute introductory cassette complement this game. *Suggested retail price: \$59.95. LucasFilm Games, P.O. Box 10307, San Raphael, CA 94912, (415) 721-3300. Inquiry #210.*

### CAPS XL

**CAPS XL** is a Computer-Aided Presentation System which offers a multi-user environment in which several people can coordinate a presentation. Presentations or newsflashes can be sent to a remote Amiga without interrupting the running show. Features include a script and presentation repository, a page layout system, an object-orientated script editor, multi-user communications, electronic mail, and more. *Suggested retail price: \$1399.00. Activa International BV, P.O. Box 2360, 110 DT Amsterdam Zuidooost, The Netherlands, (011) 312-091-1914. Inquiry #211.*

### RACETRACE

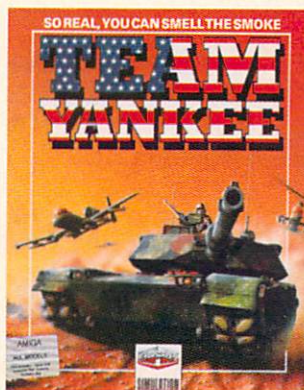
Say goodbye to time consuming digitizing with a cross-hair mouse or digitizing tables. **RaceTrace** is a sophisticated, high speed program that detects the vectors of bitmapped pictures into vector-oriented formats. Load a picture from a disk, vectorize it, and edit to suit your needs. Then save it to disk choosing a variety of formats. RaceTrace is quick, easy to use, and works in both color and black and white. *Suggested retail price: \$199.00. Activa International BV, P.O. Box 2360, 110 DT Amsterdam Zuidooost, The Netherlands, (011) 312-091-1914. Inquiry #212.*

### SCAPEMAKER

**ScapeMaker** converts any Amiga IFF standard graphics image into a landscape file for 3-D rendering with the vista scene-rendering package. ScapeMaker's landscape files are compatible with Vista, Vista 1.2, and VistaPro. The program loads and views Amiga IFF images, opens adjustable size windows over the IFF to select a region of interest, and converts selected areas to DEM (Digital Elevation Map) files. The program saves DEM files to Vista compressed format. Other features include variable scaling, variable height, and convenient file requesters for loading images and saving DEM files.

ScapeMaker is compatible with all Amiga computers and AmigaDOS 1.3 and 2.0. It correctly interprets images in all

graphic modes including HAM. ScapeMaker converts all Amiga graphics, including scanned images, digitized images, and drawn artwork to objects for 3-D rendering. *Suggested retail price: \$29.95. ScapeMaker, MegageM, 1903 Adria, Santa Maria, CA 93454, (805) 349-1104. Inquiry #213.*



### TEAM YANKEE

**Team Yankee** is an action simulation of modern tank warfare. The game combines real time simulation, arcade action and strategy with exceptional playability. Choose from long range anti-tank missiles, smoke grenades, machine guns, SABOT and TOW missiles to defeat the enemy. There are four possible scenes at once.

The tanks have been animated with great attention to detail. Controls, armament displays, as well as maps and locations of other units under your command, can be displayed on screen. Team Yankee is fully icon driven. There are 3-D bitmapped and vector images. You have control of four different units. Use smoke curtains, thermal imaging, laser range finders, and a host of weapons against the enemy. There is a full mission briefing before each assault. You are given a map and 3-D quadrant views. The game package includes disk, user guide, and an A2 battle map. Team Yankee works on all Amiga models. *Suggested retail price \$59.95. Team Yankee, ReadySoft, 30 Wertheim Court, Unit 2, Richmond Hill, Ontario, Canada L4B 1B9, (416) 731-4175. Inquiry #214.*

## new products

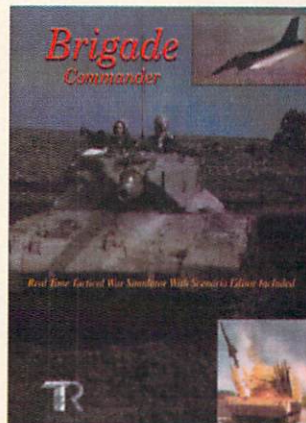
& other neat stuff

### BRIGADE COMMANDER

**Brigade Commander** is a new wargaming program for the Amiga from TTR Development. Brigade Commander features real-time action with war game simulation. There is a built in scenario and campaign editor. You can create and modify any vehicle, weapon, aircraft and more. As commander, you have full control over your units, their orders, and their mission. A special Desert Storm data disk is also included. Based on events that took place in the Gulf War, it features actual topographically correct maps and true unit specs based on real information from the theater.

Brigade Commander pits player against the computer. Unless you physically pause the game, the computer does not wait for you to move. It thinks and acts on its own in real time. The game is played on a grid of hexagons, each hex representing an area of 500 meters from side to side. On this mapboard, units maneuver and attack under the control of their respective commanders. Brigade is a scenario-driven game in which the features of the mapboard, the composition of the opposing forces, and their goals are dependant on the chosen scenario.

Other features include an oversized map for larger-than-one-screen play, full digitized sound, and animation of weap





## COSMOSTRUCTION

a space game of skill and strategy

In the near future, space colonies will require tremendous amounts of energy. Become a Cosmostructor and construct a cosmic energy duct between space colonies and planetoids to drain them of power.

In this highly addictive game you and your opponent take turns constructing a piece of the energy duct, accumulating points as you play. You must avoid mine fields, use warp gates, and hinder your enemy as you both race towards the planetoid. The player with the highest score at the end of the game is the winner!

- \* Play against a friend or the computer with ability to change mode mid-game
- \* Randomly drawn space field makes every game unique and exciting
- \* High quality graphics and animation
- \* Hard drive installable
- \* Amiga3000 version included **\$29.95**

## The TAROT MASTER

This is the only animated Tarot program for the Amiga. Learn how to read the cards yourself or have the computer tell your fortune for you! **\$24.95**

Please mail check or money order to:  
**Empire Graphics** P.O. Box 964  
 Dept B  
 Union, NJ 07083

Circle 104 on Reader Service card.

ons firing. Brigade Commander works on any Amiga. *Suggested retail price: \$44.95.* Brigade Commander, TTR Development, Inc., 6701 Seybold Road, Suite 220, Madison, WI 53719, (608) 277-8071. Inquiry #215.

## AEGIS SOUND MASTER

With Sound Master, you can use advanced audio sound capabilities with just a simple drag, point and click of the mouse. SoundMaster's high sampling rate and finer controls along with the included AudioMaster III software make the system easy to use for experienced as well as the novice user. You have the ability to create custom IFF instruments or rearrange existing songs.

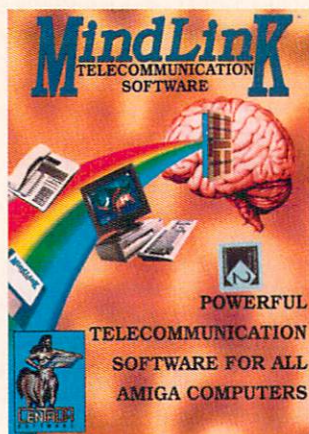
SoundMaster will take input from any source including microphones and CD's. Sampling rates are up to 56K per second in stereo for results exceeding compact disks. Other features include realtime volume control, overload indicators, a computer controlled dynamic microphone, and a one-meter cord for ease-of-use

AudioMaster software allows loop sequences, flange and echo effects, and automatic voice or sound activation. There is an Interactive Visual Waveform Editor and Tuner which allows a printout of the waveform display. The software works with any Amiga, including the 3000, and is compatible with AmigaDOS 1.3 and 2.0. *Suggested retail price: \$189.95.* Sound Master, Oxxi, Inc., P.O. Box 90309, Long Beach, CA 90809-0309, (213) 427-1227. Inquiry #216.

## MINDLINK

MindLink is a powerful telecommunications package from Centaur

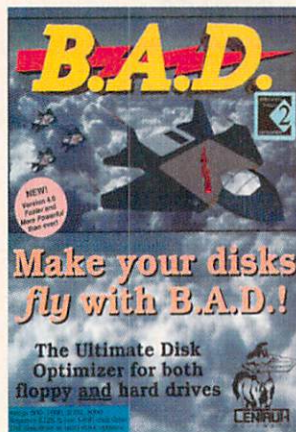
Software. It features selectable data speeds, from 300 baud to MIDI (31.25K baud). File transfer protocols include X-Modem, Y-Modem, and Z-Modem. Enter BBS commands while on-line by clicking on any word or character on the screen. An exclusive chat-modem mode allows you to talk while transferring files. There is also real-time monitoring of on-line charges.



Other features include 20 password-protected function keys for security, a programmable timer, as well as an integrated script language for designing your own modem utilities. There is an integrated CLI and text editor and a user definable ASCII table. The program is fully multitasking and Workbench 2.0 compatible. *Suggested retail price: \$49.95.* MindLink, Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278. (213) 542-2226. Inquiry #217.

## B.A.D.

B.A.D. version 4.0 from Centaur Software is out. B.A.D. is designed to optimize your disks and



your drives for peak performance and fast disk and file access time. Your disks will be quickly processed in a methodical and logical order to attain this improvement. B.A.D. uses standard AmigaDOS formats to produce disks identical to the original but with greatly improved performance. This disk utility can reduce access time by up to 500%.

B.A.D. restores smooth disk operation. It works with floppies and hard drives and supports multiple hard disk partitions. B.A.D. provides really fast Workbench or CLI directory access. It features real time graphic display processing and is 100% AmigaDOS compatible. Virtual memory support allows processing of very large hard drive partitions. B.A.D.'s test mode provides information that allows you to fix most corrupted disks. Other features include an Estimated Time of Completion Timer, a 3-D Workbench 2.0 style interface, and a handy disk drive cleaning

program. *Suggested retail price: \$49.95.* B.A.D., Centaur Software, P.O. Box 4400, Redondo Beach, CA 90278. (213) 542-2226. Inquiry #218.

## X-OR

X-OR is the Universal System Exclusive Orchestrator for the Amiga. In addition to being a full-featured generic editor librarian for the Amiga, it also can be configured to match a user's complete set-up and automate all MIDI data communication. By taking a "snap shot" of the user setup, X-OR treats all MIDI devices as one instrument. This offers better control over multi-instrumental setups. Other features include support for over 90 MIDI instruments, graphic editing, database sound search, automatic MIDI patch-bay switching, blending, and more. *Suggested retail price: \$325.00.* X-OR, Dr. T's Music Software, Inc., 220 Boylston St., #306, Boston, MA 02167, (617) 244-6954. Inquiry #219.

## ADD-ON SERIES FOR BARS&PIPES PROFESSIONAL

Blue Ribbon SoundWorks has released three new program packages as part of an add-on series for Bars&Pipes Professional. All of the new programs require Bars&Pipes Professional to run. First, the Creativity Kit, is designed to accommodate the creative needs of musicians, professional and amateur alike. The kit comes with many useful tools including Accent Randomizer, AnyPhonic, and Riff-chord. Also included in the package is auto transpose and auto modulate among other items. *Suggested retail price: \$69.95.* The Pro Studio Kit, the second package, is designed to accommodate the needs of the professional Amiga musician. The Pro Studio Kit has a selection of tools specially designed for editing and mixing. Among its features are an event smoother, velocity controller, note filter and note mapper. The program also includes an articulation modifier and pitch bender. *Suggested retail price: \$69.95.* The Tootorial Kit is the third part of the Bars and Pipes Add-on Series



# AMI-BACK™

## ***The Next Generation of Backup Program***

***For the Commodore Amiga Computer***

*Ami-Back is a comprehensive hard drive backup utility with a number of powerful features that make it the most professional program of its type on the market.*

- Elegant user interface for easy operation.
- Allows multiple configurations for a wide variety of backup and restore options.
- Backs up to floppies, high-density floppies\*, harddrives, and SCSI tape drives.
- Performs backups to a single AmigaDOS file or device.
- Performs complete, incremental (by date or archive bit), and selective backups.
- Allows up to 100 file exclusion conditions during backup.
- Allows you to replace defective media without interrupting backups.
- Performs complete or selective restores.
- Allows control of protections bits and file timestamps during restores.
- Allows you to Write-Over, Skip-Over, or Rename files during restores.
- Compare mode compares backed-up data to system data if data loss is suspected.
- User-configurable scheduler (no script files necessary!) allows unattended backups.
- Log file keeps track of background scheduler operations.
- Background backups may be performed manually.
- Technical support for registered users is provided by phone, support BBS, GENie, or BIX.
- Works with AmigaDOS version 1.3 or greater (AmigaDOS 2.0-only version included).
- *Ami-Back* is extremely fast.
- *Ami-Back* is multitasking friendly.
- *Ami-Back* is not copy protected in any way.

\* Commodore standard. Applied Engineering's HD floppy does NOT work with some versions of Kickstart 2.0 at this time.

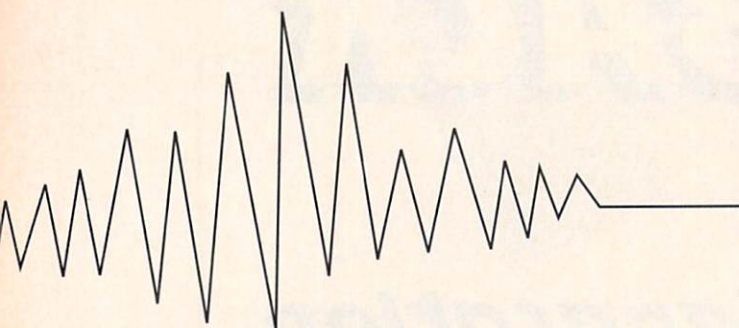
*Don't wait until it's too late... order your copy of Ami-Back today!*



For a limited time, send in your previous backup program original disk and order *Ami-Back* at the special price of \$49.95.

suggested list price: \$79.95





# Feedback

## PostScript Support

I don't understand why the majority of support for laser printers in Amiga software is for PostScript laser printers which are outrageously expensive. There are a lot of us out here—the number is growing rapidly—who own HP Laserjet compatibles which offer excellent print quality at a reasonable price. Yet the only software support we get is to use either the printer's internal fonts, which are usually few, or the crude bitmapped fonts, which take almost forever to print.

When are the software companies going to wake up and offer soft font and cartridge font support for HP compatibles? This is something that is widely available in MS-DOS word processing/desktop publishing software. Given the programming talent that is out there commercially as well as among individuals, this can't be too difficult a task to accomplish. Word processors such as Pen Pal, ProWrite, WordPerfect as well as the major desktop publishing packages absolutely should support soft fonts and cartridge fonts. I challenge someone to make the use of downloadable soft fonts and cartridge fonts with Amiga software a reality. Now that HP compatible laser printers from EPSON, Panasonic, Okidata and others are selling for street prices of \$799 and less, the market for this service will continue to grow at a rapid pace.

I have come across a PD program called HPFONT v1.0 that will download soft fonts (copied from MS-DOS format to Amiga format by DOS2DOS) to the laser printer. However, I have been unable to get WordPerfect, which the HPFONT author suggested using, to recognize and/or use them. I would love to hear from anyone who could help me with this problem.

Martin Coats  
Rocky Mount, NC

*—According to a spokesperson at WordPerfect Corporation, WordPerfect 4.1 does support soft fonts. Nevertheless, other*

*producers should note Mr. Coats' point that as users acquire laser printers, they will want soft fonts and cartridge fonts support.—Ed.*

## Modula-2 User Group

I am writing in hope that you may put me in contact with a Modula-2 user group in the United States or Australia by printing this letter in *Amazing Computing For The Commodore Amiga*.

Wariwick Browne  
Barthurst, Australia

*—It's hoped that by seeing your letter, Modula-2 user groups in the United States and Australia respond to Amazing Computing with the information you seek. Meanwhile, AC's Guide To The Commodore Amiga has a listing of user groups, including those in Australia, but none claims to have a Modula-2 Special Interest Group.—Ed.*

## My Own Private Wish List

- I wish my computer would do what I want it to do, not what I tell it to do.
- I wish all programs had an "undo" button.
- I wish all requesters had their OK's and CANCEL's in the same position.
- I wish keyboard equivalents needed only one key, instead of combinations of two or more for French accents, etc.
- If we must use combinations of keys, I wish both keys were accessible with one hand—how about Right Amiga "S"? Now that's a stretch!

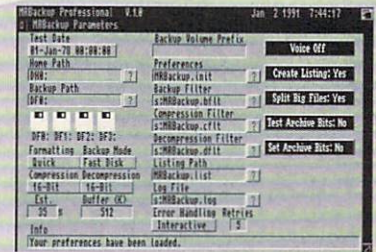


# RXTools

**RXTools is an object oriented interface builder which extends the capabilities of ARexx and the Amiga. With the built in editor, RXTools provides a complete development system for ARexx on the Amiga.**

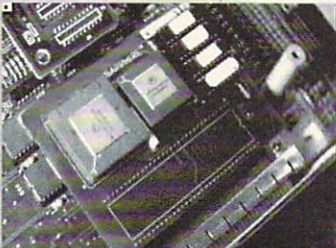
- ARexx function host environment system which runs in the background - ARexx Required.
- Allows you to create windows, gadgets, requesters and more within your ARexx applications.
- Provides a programming addition to ARexx not otherwise available.
- Built in editor allows easy manipulation of RXTools and ARexx scripts.
- AmigaDOS V1.3 and 2.0 Compatible.
- Retail Price \$54.95

## MRBackup Professional



MRBackup Professional allows for easy yet powerful backup commands at the click of a gadget. MRBackup Professional will allow backups to floppy, another hard drive, virtual file, SCSI streaming tape, or even to DAT tape.

- SCSI Streaming Tape Capability - Use your existing controller and a SCSI tape drive, NO Extra hardware required (most controllers and SCSI drives supported).
- Utilizes full compression, (12 to 16 bit), to save backup space.
- With FastDisk option, even floppy backups take less time.
- Has full ARexx integration.
- Allows for complete external control of the backup options.
- AmigaDOS V1.3 V2.0 Compatible.
- Retail Price \$54.95, With Tanberg 150Mb SCSI Streaming Tape External \$949.95 Internal \$749.95, Wangtek 150Mb SCSI Streaming Tape External \$999.95 Internal 799.95, Sony full height DAT External \$2049.95 Internal \$1849.95.



## Sapphire Accelerator 68020 / 68881

Fits snugly in an Amiga 1000, 500, and 2000  
For easy installation, included is a disk with instructions, pictures and some public domain benchmark software. Also included is an electrostatic discharge (ESD)

information card, and an ESD safety strap. Features include:

- Factory Installed 12 MHz 68020 CPU And 68881 FPU 32 Bit Processors operating at 7.16 MHz.
- Speed Increases Of Up To 2.4 Times Faster In Integer, And 3.2 Times Faster In Floating Point.
- Small Compact Size, Smallest Yet At Only 3 1/8" x 4 1/4" x 1/2".
- Not A Pseudo Accelerator, but a true 32 Bit Accelerator Card Using 32 Bit Processors.
- One Full Year Factory Warranty.
- Retail Price 399.95

TTR Development, Inc  
6701 Seybold Rd.  
Madison, WI 53719

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THE COMPUTER INSIDE US ALL

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<b>WEDDING SET Plus 8 Disk-\$69.95</b>	
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<b>Postscript Slides-8K-24 Bit -LOW \$</b>	
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<b>More Valuable Volumes Coming:</b>	
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<b>CV Designs</b>	
<b>61 Clewley Road</b>	<b>Video Visions</b>
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<b>617-391-9224</b>	<b>Assistance for every</b>
	<b>Video Need !</b>

Circle 195 on Reader Service card.

- I wish that software manufacturers would supply keyboard templates for the location of their key equivalents or even separate cards to keep beside the keyboard while we're working.
- I wish that I could find all the dingbats that are in the 100, 200 & 300 series supplied with the typeface. I've found 136 of them but there are still lots missing.
- I wish I could automatically print all the odd-numbered pages of a document, then turn the pages over and print all the even-numbered pages on the back to get a proper proof of a multi-page project.
- I wish there was an easy way to turn a desktop publishing file into an ASCII file for importing into another program.
- I wish there were more examples of applications of features. A little "for example" at the end of each would give us ideas for future use.
- I wish Tech Support lines were open 24 hours a day, or that I would run into problems only between 9 and 5.
- I wish all software manufacturers would have free support forever instead of a limited time. Once you've learned a program, who wants to pay \$x to solve one problem a year. One tends to ignore the features that are confusing.

- I wish illustrations or bitmaps could be attached to the text describing them in a large document, so that if re-formatting changes the position of the text, the illustration moves with it.

- I wish that often-used phrases, etc. could be saved as macros to save retyping them numerous times.

- I wish I could easily change a block of text to lower case after I have inadvertently continued typing with the caps lock still on.

- I wish there were at least three parallel ports. Switch-boxes and long cabling can cause problems with some printers and plotters.

- I wish updated programs with completely new manuals had a separate reference sheet with a list of the new features and their respective page numbers to save rereading the whole manual.

- I wish printers and plotters had large buffers when everything is going well, and tiny buffers when something goes wrong.

- I wish all programs supported PostScript.

- I wish people would stop pirating software, so that the rest of us won't have to pay extra to compensate for the loss nor have to put up with copy protection.

- I wish everything worked perfectly all the time, including me.

As you can see, most of this is pure fantasy. Some programs do incorporate some of my wishes, but it would be nice not to have to re-learn a lot of basics everytime I change programs.

Karen Pringle  
Thamesford, Ontario

*All letters are subject to editing.  
Questions or comments should be sent to:*

*Amazing Computing  
P.O. Box 869  
Fall River, MA 02722-0869  
Attn: Feedback*

*Readers whose letters are published will receive five public domain disks free of charge.*



(New Products,  
continued from page 10)

ries. The Tootorial Kit, which also requires Bars and Pipes Professional, is designed to instruct and inform users on the use of the Bars and Pipes Professional program. The kit includes several tutorial lessons which explain Bars&Pipes Professional's features in a step-by-step manner. *Suggested retail price: 69.95.*

Blue Ribbon SoundWorks also announced that they were going to extend the Bars&Pipes Professional upgrade offer. The offer previously applied to current owners of Blue Ribbon products. From now until December 15, 1991, all Amiga software owners can upgrade to Bars&Pipes Professional or Bars&Pipes for a special price plus a cover page from any Amiga music software manual. This offer extends to all Amiga users. The upgrade fee for the original Bars&Pipes product is \$99.00. The upgrade fee for Bars&Pipes Professional is \$199.00. For more information contact Blue Ribbon SoundWorks. *The Blue Ribbon SoundWorks, 1293 Briardale NE, Atlanta, GA 30306, (404) 377-1514. Inquiry #220.*

## DESIGNWORKS

DesignWorks from New Horizons is a structured drawing program for the non-professional user. DesignWorks treats graphic elements as independent objects, allowing complete control over layout and design. Combined with flexibility in the precise positioning and appearance of objects, DesignWorks makes revisions and modifications easy. Editing and redrawing is done quickly so you don't need to be a professional to achieve quality results.

DesignWorks features an AReXX port and Macros when used with AReXX. It allows drawings up to 100"x100" in size and up to 10 drawings can be open at the same time. You can duplicate, rotate, flip, and scale objects, have text with multiple fonts, sizes, styles, and colors, and import and export IFF pictures. There is near-PostScript quality printing on dot-

matrix printers and full 4,096 color printing. DesignWorks also allows full printer control including page orientation. DesignWorks provides full support for Kickstart 2.0. It requires Kickstart 1.2 or later and 512K of memory. *Suggested retail price: \$125.00. DesignWorks, New Horizons Software, Inc., 206 Wild Basin Road, Suite 109, Austin, TX 78746, (512) 328-6650. Inquiry #221.*

## VIDEO ESCORT 1.0

Video Escort combines the ideas of a professional videographer who wants to computerize his business and a database programmer who wants to make that conversion from paper to computer as simple as possible. Video Escort works on several levels, saving time. Information is entered only once no matter how many times or different ways it is to be used. Your Amiga can search and sort much faster, and then display the information in a well-organized fashion. The only paper involved is that generated by your printer.

Video Escort includes a forms generator which allows you to make entries, create fields and categories, index and file. Create labels, summary reports, and other useful business functions. The program allows easy access to your information and provides organization for your customer files. Special forms include contracts, crew manager forms, a scheduler, information and maintenance forms, and a host of accounting and financial management forms. Video Escort requires Superbase Professional 3.02 and AmigaDOS 1.3. *Suggested retail price: \$300.00. Video Escort v1.0, Mr. Hardware, P.O. Box 148, C.I., NY 11722, (516) 234-8110. Inquiry #222.*

## ADVANCED MILITARY SYSTEMS

Dominion Software & Design is now shipping its Advanced Military Systems package for CDTV. Geared toward both military enthusiasts and history buffs, Advanced Military Systems features over 1000 breathtaking images, hours of narration, and many unique reference tools. This

new CDTV release covers over 100 of the world's most modern military machines. These include prototypes of the United States' F-22 Advanced Tactical Fighter and the V-22 Osprey tilt-rotor aircraft. Advanced Military Systems also provides analysis of the performance of various pieces of U.S., Allied, and Soviet-made equipment during the Persian Gulf War. Systems highlighted include the M1A1 main battle tank, the AH-64 Apache helicopter, and the Tomahawk cruise missile, not to mention the Patriot missile defense system and its adversary, the modified SCUD missiles, the "al-Abbas" and "al-Hussein." Users start from five different categories: Strategic Systems, Air Power, Land Power, Sea Power, and Weapon Systems.

Each system includes text, specifications, and the ability to view each image individually. View Soviet MiG's, U.S. Nimitz class carriers, fighter jets, missiles, and much more. *Suggested retail price: \$39.95. Advanced Military Systems, Dominion Software and Design, Inc., 3328 Oakshade Court, Fairfax, VA 22033, (703) 318-8270. Inquiry #223.*



## SUPRAMODEM 9600

Supra Corporation has released the latest in its line of SupraModems. SupraModem 9600 features CCITT V.32, CCITT V.42bis, and MNP 2-5, providing up to 38,400 bps throughput when connected to a modem that supports the same protocols. Modems that support V.32, the industry standard for 9600 bps modems, can communicate with each other regardless of the manufacturer.

## new products & other neat stuff

The SupraModem 9600 features a five year warranty, Hayes compatibility, asynchronous and synchronous operation, compatibility with most popular telecommunications software, and other features like auto dial and an adjustable volume speaker. It works with any Amiga and comes with its own cable. *Suggested retail price, 699.95. SupraModem 9600, Supra Corporation, Albany, Oregon, (503) 967-9075. Inquiry #224.*

## 600 AMIGA FONTS

Another new set of fonts has been released by Allied Studios. Appropriately called 600 Amiga Fonts, this package features hundreds of fonts in a variety of shapes, sizes, and styles. Fonts such as Avante Garde, Bodini, and other familiar styles are included. Some not-so-familiar type styles are Japanese, Abu Dhabi, Cirth, and Zaph Dingbats. Also included are several sets of graphic icons, such as Toyland, several different music note and staff sets, playing cards, dice, a floorplan set, and several different sets of general icons.

Use 600 Amiga Fonts with DeluxePaint III, AmigaVision, VideoTitrer, ComicSetter, ProWrite, excellence!, AmigaBasic, and many other programs that support Amiga standard bitmap disk fonts. Instructions for the beginner are included. The set also includes detailed installation instruction. The set comes on six font-packed disks, with over 600 bitmap font sizes and more than 250 type faces. Each font has been reworked in the Calligrapher Font Editor program. *Suggested retail price: \$30.00. 600 Amiga Fonts, Allied Studios, 482 Hayes St., San Francisco, CA 94102. Inquiry #225.*



## new products *& other neat stuff*

### BROADCAST FONTS 3-D

From Unili Graphics comes **Broadcast Fonts**, three volumes of 3-D object fonts. Each volume contains three font styles that can be sized, rotated, colored, edited, and manipulated in virtually any way possible. Each font includes CAPS, small case, numbers and symbols.

The fonts can be installed to either the harddrive or another floppy. The fonts may be used with graphic editing and paint programs to produce custom results. The fonts were originally created with Phong Shading but can be converted easily. *Suggested retail price per set: \$49.95. Broadcast Fonts 3D, Unili Graphics, 143 Lorraine Ave., Pittsburg, CA 94565, (415) 439-1580. Inquiry #226.*

### KOMFORT WRIST REST

**JMJ Enterprises** has released their latest ergonomic product, the **Komfort Wrist Rest**. The Komfort Wrist Rest is designed to provide protection from Carpal Tunnel Syndrome and repetitive strain injuries for those people who spend long hours typing at computer terminals. By easing the uncomfortable and fatiguing hand positions usually encountered in typing, the soft, leather-grained, adjustable wrist rest allows the operator to be more comfortable while working. The wrist rest reduces the amounts of arm and shoulder discomfort common with keyboard typing.

The Komfort Wrist Rest is a two-piece assembly consisting of a base and adjustable foam support. The base is designed in molded high impact plastic with four sets of tracks. The support cushion is bonded to a metal plate. The plate is inserted into the tracks at the desired height. *Suggested retail price: \$35.00. Komfort Wrist Rest, [MJ] Enterprises, 24385 Manzanita Dr., Lake Forest, CA 92630, (714) 472-4409. Inquiry #227.*

### AMIGA GENLOCKS

**Magni Systems** announced significant changes in their pricing and distribution structures for their **4004/4004S Amiga Genlocks**. The growing interest in multi-media and the arrival of the Video Toaster have all served to reinforce the Amiga as a video platform. This prompted the company to chose to distribute their genlocks on a nationwide level rather than just a regional basis, as well as to lower current prices.

The 4004 NTSC genlock/encoder will be offered in North America through Creative Computers. The corresponding model for European PAL standards, the 4005, will continue to be available through Magni's international distribution network. *Suggested retail price for the 4004: \$995.00. Magni Systems, Inc., 9500 SW Gemini Drive, Beaverton, OR 97005, (503) 626-8400. Inquiry #228.*

### BROCHURE

A free catalogue/brochure from **Viziflex Seels** describing their entire line of keyboard covers and accessories is now available direct from the company. The company produces protective working keyboard covers which act as protection from spill and other contaminants which might interfere with a keyboard's proper operation. Over 600 different seels are produced for virtually every keyboard and other computer accessories as well.

Beginning with "Acer" and ending with "Zeos," the reader will find a complete listing of available products for each keyboard. Some other accessories described are non-slip mouse pads, slot systems for disk storage, diskette travel wallets, and anti-static production items. Order the brochure free, direct from the company: **Viziflex Seels, Inc., 16 E. Lafayette Street, Hackensack, NJ 07652, (201) 487-8080. Inquiry #229.**

### HARE RAISING HAVOC

From the studios of R.K. Maroon, **Hare Raising Havoc** stars Roger Rabbit in a crazy, hare-brained adventure. Stunning animation and graphics brings this innovative and exciting software to life.

The real voices of Roger Rabbit, Baby Herman, and Jessica are featured in this interactive toon world.

Roger is left in charge of Baby Herman, but before you know it, Herman has disappeared. You have to help Roger escape from a seemingly endless string of predicaments to get Baby Herman back home before Mommy returns. **Hare Raising Havoc** will be available this summer for the Amiga. *Suggested retail price: \$49.95. Hare Raising Havoc, Walt Disney Software, Inc., 500 Buena Vista Street, Burbank, CA 91521. Inquiry #230.*

### THE ROCKETEER

He never intended to become a hero, but then most people don't clash with the Nazis and have G-Men on their tail while trying to rescue their kidnapped girlfriend.

**The Rocketeer** must face this and more in this new action/strategy game from **Disney Software**. Scheduled for release this summer as a movie, and based on the popular character created by Dave Stevens, the Rocketeer features fast action, comic book graphics, videotaped actors, and real props and sets from the movie. Set in the 1930's, the Rocketeer lets players fly vintage aircrafts and pit their brawn and wits against Nazi henchmen. Players also get to fly the experimental Cirrus X-3 rocket pack. *Suggested retail price: \$49.95. The Rocketeer, Walt Disney Software, Inc., 500 Buena Vista Street, Burbank, CA 91521. Inquiry #231.*

### STUNT ISLAND

An island paradise is the setting for this new simulation from **Disney Software, Stunt Island, The Flying and Filming Simulation**. The island complex was designed for the express purpose of staging and filming the most exciting and dangerous aerial stunts. Players move up the ranks in either film making or stunt flying as they learn from experts.

As a stunt pilot, fly P-51 Mustangs and other planes to do the hottest stunts imaginable. As a film maker, the player will learn camera placement, directing, and editing in pursuit of producing the ultimate thrill movie. **Stunt**

ORDER HERE!



Island will be available this fall for the Amiga. *Suggested retail price: \$59.95.* Walt Disney Software, Inc., 500 Buena Vista Street, Burbank, CA 91521. Inquiry #232.

## THE OFFICIAL GUIDE TO ROGER WILCO'S SPACE ADVENTURES

Space Questers can now learn what goes on in the mind of the legendary janitor of the universe. With this book, readers will accompany Roger Wilco as he stumbles into all sorts of predicaments, barely escaping by the skin of his teeth. **The Official Guide to Roger Wilco's Space Adventures** is packed with hints and clues, maps of every Space Quest scenario, locations of all the inventory items, and a walk-through to the finish of every adventure. There are some added bonuses like what makes Roger tick and the identity of Roger's secret crush. This is the only official guide to the four Space Quest adventure games. *Suggested retail price: \$14.95.* *The Official Guide to Roger Wilco's Space Adventures*, Compute Publications International, LTD., 324 West Wendover Avenue, Suite 200, Greensboro, NC 27408-8439. Inquiry #233.

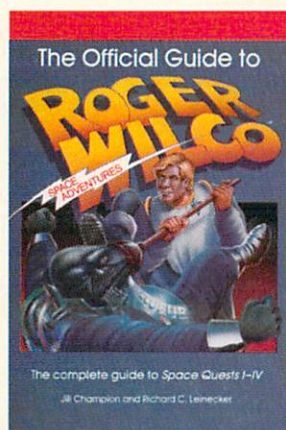
## VIDEO TEXTURES AND BACKGROUNDS

**Video Textures and Backgrounds** are three full disks of various textures that can be used in any IFF compatible paint program, 3-D rendering programs, as fills for fonts, or as backgrounds for video and titling. Included are many color patterns and styles of wood textures, stones, plants, interior designs, and other items. The palettes of these items are not fixed and may be changed in any paint program if necessary. *Suggested retail price: \$24.95.* *Video Textures and Backgrounds*, Take Four Productions, 11396 Camarosa Circle, San Diego, CA 92126. Inquiry #234.

## BIT.MOVIE '91

The Amiga made a clean sweep at **Bit.Movie '91** in Riccione, Italy this Spring. Bit.Movie is a national exhibition directed and organized

by the cultural association Adriatic Coast Amiga Users Club and the local municipality of Riccione. Fans of computer graphics, beginners and professionals, meet here every year. Bit.Movie is a competition and show of computer animation in real time, rendered with a personal computer.



More than 4000 attendees visited the exhibition. Displayed were 30 animation works admitted to the final phase of the contest. The visitors were asked to vote on their three favorite animations. A panel of judges selected the three top winners also. For the judges choice, the winning animation was "The Dating Game," by Eric Schwartz of the United States; second was "Glass Fish," by Milko Mrsek, of Italy; third place was "Musique" by Pier Tommaso Bennati also of Italy. The visitors votes chose "Glass Fish" first, "The Dating Game" second, and "Chess," also by Milko Mrsek, third. All the winning entries were rendered on Amiga computers. For more information on this competition or its sponsor, please write: Adriatic Coast Amiga Users Club, c/o Carlo Mainardi, Via Bologna n13, 47036 Riccione, Italy.

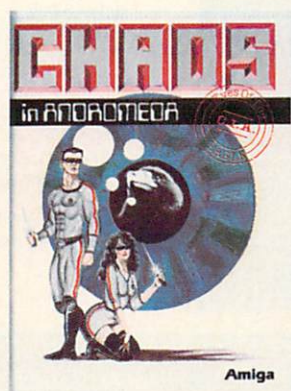
## AUTOMOBILE CONSTRUCTION SET

**The Madrigal Automobile Construction Set** is an interactive clip art design system for use with paint programs. Each set contained four disks of IFF screens of automobiles from Europe, the U.S., and Asia. The General Collection contains sedans, sports

cars, coupes, wagons, hatchbacks, pickup trucks, long haul trucks, and vans. The sport cars set contains performance cars made by Chevy, Honda, Triumph, Lamborghini, and Porsche, to name a few. All are shown in side view and cross section displaying engines, transmissions, seats, driver-passenger arrangements, and tires. The system is designed to give the user the power and flexibility to easily examine design options, manipulate ready-made automotive design components on-screen, modify existing automobile designs, or create new ones. Many of the included screens contain front and rear views. Also provided on a disk is a general history of automobile design and individual specification sheets. *Suggested retail price for the general set: \$49.95. Suggested retail price for the sports cars set: \$39.95.* Madrigal Residential Designs, P.O. Box 2292, Santa Rosa, CA 95405 (707) 539-5675. Inquiry #235.

## CHAOS IN ANDROMEDA-EYES OF THE EAGLE

The latest in the Chaos adventure game series, **Chaos in Andromeda**, is out from On-Line Enter-



tainment. This futuristic fantasy role-playing game features massive alien landscapes, extensive graphics, and the ability to control up to four characters at once. You have been chosen to be sent to the planet of Andromeda to locate and return a missing scientist. Galaxy-wide peace depends on it. On the planet are agents and androids waiting for your command. How you decide to accomplish your mission is up

## new products & other neat stuff

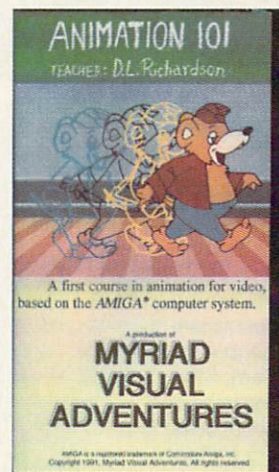
to you. The game enables you to select and save your character's personal details as well. *Suggested retail price: \$24.99.* *Chaos in Andromeda*, On-Line Entertainment, 642a Lea Bridge Road, London E10 6AP, (081) 558-6114. Inquiry #236.

## ANIMATION 101

**Animation 101** is a video cassette tutorial in real-time animation for video based on the Amiga computer system. The program is in two parts. It is not intended to cover the same material found in software manuals. Rather, it is an actual course in animation and a study in motion, with a brief section to clarify confusion about video editing. It is a beginner course and does not cover 24-bit graphics or single frame animation. All of the animation covered in the program is in real time using basic software and relatively inexpensive hardware. *Suggested retail price: \$35.00.* *Animation 101*, Myriad Visual Adventures, 1219 NW 79th St., Oklahoma City, OK 73114. Inquiry #237.

•AC•

New Products and Other Neat Stuff is compiled by Jeff Gamble and Paul Larivée



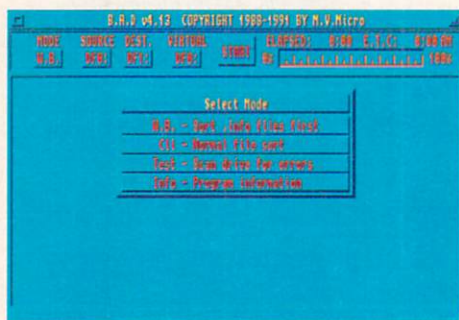


# LOOKING GOOD WITH B.A.D.

## FLOPPY AND HARD DISK OPTIMIZER

by Rick Manasa

THERE ARE ABOUT a half-dozen utility programs for the Amiga that I would be miserable without. One of them is Blitz-A-Disk, or B.A.D., a program that claims to improve disk access up to 500% over non-processed disks. Whether B.A.D. has reduced my disk access time by 500% I couldn't say, but access time has improved enough that I have processed almost every AmigaDOS disk I own. The first major rewrite has recently been released, sporting a new interface, improved 2.0 compatibility, and a variety of new features designed to make life with B.A.D. even better.



Above: B.A.D.'s Mode Requester enables you to tell B.A.D. what process to perform on your disk. Right: The Memory Query asks you to decide how much memory B.A.D. should leave available for the system, with a recommended amount listed in a string gadget.

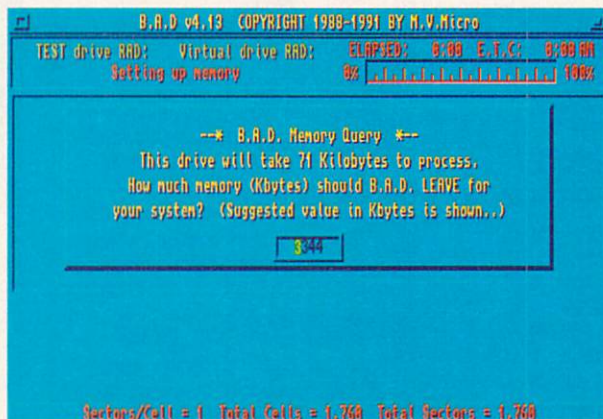
A brief description of certain aspects of the Amiga operating system may help explain why a disk optimizer program is so valuable. When the Amiga writes to a freshly formatted disk, it has little trouble keeping a file in one location. However, as you add new files and delete or change old ones, the files on the disk can become fragmented.

This is so because the Amiga is being very efficient, using every available free space on the disk. Efficiency is good, but this means that your letter to Aunt Sally may be split into three sections and filed into three different locations on your disk. AmigaDOS keeps track of which file fragments go with each other, but it sometimes has to search the entire disk to load or save all the sections. This is the reason for the "gronking" we all hear as the drive head scans up and down the disk, putting together all the pieces of a file when loading, or splitting a file up when saving. This not only tries one's patience, but it can shorten the life of your disk drive.

So what exactly does B.A.D. do? It reorganizes the files on your disk, so that the files are not fragmented. It takes the three parts of Aunt Sally's letter and meshes them neatly back into one contiguous space on the disk. Data is not changed or altered. B.A.D. merely changes the location of the data so all portions of each file are stored in one place. Instead of three sections to Aunt Sally's letter, there is now only one section—the complete file as originally written. This means the Amiga can find your letter faster and load it faster, with less wear and tear on the system hardware.

The original version of B.A.D. came in an extremely spartan package. It consisted of the program disk, surrounded by a tri-folded piece of heavy construction paper printed with quick start docs, all shrink-wrapped together. If I bought programs based on packaging and marketing alone, I would have passed this one by. The new version, however, has been packaged quite professionally and includes a good manual in place of the ReadMe file that contained the docs in previous versions. For a 25-page manual to have a full page index is a pleasant surprise and another plus.

Those that upgrade from 3.x versions of B.A.D. only get the program disk with a BAD.doc file containing the manual. Differences between the hard copy manual and the update BAD.doc file are, for the most part, negligible. However, discussions on FFS for floppies, error conditions and using BAD with the RAD: device provide useful information that should have been in





cluded in the ReadMe file. People upgrading shouldn't be shortchanged on this information.

B.A.D. comes on one non-copy protected disk, so I made a backup and got started. I grabbed the B.A.D. icon and dumped it into the Work partition of my hard drive. No fancy installation routines here. Just copy it and you're ready to go.

Besides the B.A.D. program, the disk contains a variety of PD utility programs—a couple of sector editors, a copy of LhArc and a text reader among others. There is a ReadMe file that describes these programs, a Version file that gives a history of the different releases of B.A.D. and the docs for the program if you're working with the upgrade disk. A hard copy of the docs ran only 10 pages. I would recommend that you print a copy just to be on the safe side.

Getting started is a snap. In fact, the first paragraph of the manual states that "B.A.D. is so easy to operate that you could stop reading now and never return...." Clicking on the program icon brings up a colorful screen with assorted gadgets and buttons. There are no menu items nor hotkey equivalents. I found this a bit disconcerting, though I can't quite say why. While the original version of B.A.D. opened a small window on the Workbench screen, this new version of B.A.D. opens on its own screen. This keeps me from wandering into another program, something to be cautious about when B.A.D. is running. If you try to access a disk or partition that you are processing, or if you try to write to RAM: while B.A.D. is running, you can have problems. Best to leave B.A.D. alone while it's working. Just pretend the Amiga can't multitask until you have a better idea of what you can and cannot do when B.A.D. is doing its thing.

The screen has the standard close gadget in the upper left hand corner, which only works when B.A.D. is not processing a disk. The standard Screen-To-Back gadget is located in the upper right-hand corner. This gadget is functional whether or not B.A.D. is processing a disk. There are only five other gadgets to deal with. The first selects which mode B.A.D. will use in processing. The next three select which drive is the source, which is the destination,

and which drive will serve as a virtual drive, used for caching information when memory runs low. The last gadget starts the processing. As the manual states, before starting any processing, be sure to back up your data. If a disk optimizer is interrupted for any reason, data can be corrupted or irretrievably lost. This is not a program bug, but rather something that is in the nature of the process. Since the disk is being accessed all the time it is being processed, and data is being shuffled back and forth from volatile memory (RAM), a power loss or an accidental foul up by the user can trash the drive and your data.

While we're passing caveats, let me point out something in the manual that you might miss the first time through. You must disable any disk caching program (e.g., BlitzDisk, FACCII, FastDisk, etc.) before running B.A.D. These programs use routines that can interfere with the way B.A.D. functions. This is one of those little things that is included in the manual, but not in the BAD.doc file. So far, I haven't had any problems running FACCII while running B.A.D., but I can't say I haven't been warned.

I have run into a problem running B.A.D. and Quarterback Tools from the CLI under 2.03. I have lost access to my icons on the Workbench after processing disks with both programs. The icons on other screens work fine, and I can bring up a CLI and launch other programs from MachIII without a hitch. Everything behaves properly when I boot either program from their respective Workbench icons. No one I spoke with has an explanation for this. This appears to be one of the many quirks we must accept on our way to a final version of 2.0. Again, if you run B.A.D. from its icon you will have no problems. If you run it from a CLI or a hotkey program under 2.03, you will have to reboot your system to get at the icons on the Workbench screen.

Clicking on the Mode button brings up a requester with four choices. You can get more information on the version of B.A.D. you are using or select one of three processing methods. You can do a Test scan. This will check out your disk or partition for errors and inform you of any that it encounters without doing any processing, and then

quietly exit. The error message will give you enough information to look around with one of the enclosed sector editors and attempt to correct the problem. If you have any doubts about your ability to handle a "Key Already Set" or "Checksum Error" message, don't hesitate to call the people at M.V. Micro. They will walk you through the process step-by-step to make sure that you get it right.

Unlike other disk optimizers on the Amiga, B.A.D. doesn't attempt to correct any problems it finds. Mark Hellman at M.V. Micro explained to me that there is no way for any program to make the decisions necessary to correct some of these errors. They require the user to decide, for example, which files should be linked and which shouldn't. While B.A.D. is a marvelous program, it doesn't try to cross the line separating tool from tool user.

The last two options in the Mode requester are actually the first two on the list. These are the ones that you will use most frequently. They allow you to select either the Workbench (W.B.) mode or the CLI mode. Most users will find that the Workbench mode provides the best results. The only difference between the two is that the Workbench mode gives preference to all the program and file icons—the .info files. B.A.D. processes any directories without icons in CLI mode, regardless of which mode the user has selected. This has the effect of giving you the best of both worlds. Directories with icons are processed for fast Workbench access, while directories without icons are maximized for CLI use. To be honest, I don't see the need for a separate CLI mode. Perhaps the CLI mode processes disks and partitions faster than the Workbench mode. Maybe there are people who never use the Workbench. At this point, I don't see a reason to change the default (W.B.) processing mode.

Once you've decided which mode to use you'll need to pick your source, destination, and virtual drives. Clicking on any of these buttons brings up a requester listing all valid AmigaDOS drives. These could include any mounted floppy drives or hard drive partitions, any removable random access read/write media like a Syquest, as well as any RAM-based drives, other



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Circle 165 on Reader Service card.

than the standard Amiga RAM: device. The only other exceptions listed in the manual are the "VD" series of devices, like "VD0:" and "VDK:". Since these are handlers, not devices, B.A.D. doesn't see a reason to process them. I confess that I've always treated RAD: and VD0: like variations on a theme, rather than unique and distinct entities. They seem to function quite similarly to the user. B.A.D., apparently, sees things differently.

When you've selected which drive to process (Source), where to put the processed data (Destination), and where to store processing information in case you run low on memory during the optimizing (Virtual), you're ready to start. Clicking on the Start button brings up the B.A.D. Memory Query. This asks you to decide how much memory B.A.D. should leave available for the system, with a recommended amount listed in a string gadget. You may override B.A.D.'s suggestion by entering the amount you'd like to leave available for other programs and processes. This would seem to be most useful if you were going to multitask while blitzing a disk. I would again urge caution when considering multitasking with B.A.D. Experiment with some non-critical data to discover what will and what won't work while running B.A.D. If you're not going to multitask, I'd suggest leaving the default value as it is, or experiment with setting it as low as you can get it. This

will give B.A.D. all the memory it can use, and could noticeably speed up the process.

Once started, B.A.D. displays a different set of information. When in single drive mode, the top left of the screen displays the Source (BAD) drive and the Virtual drive, with the amount of disk processed listed as a percentage below. In two-drive mode you'll see the source and destination described as "BAD drive XXX: to drive YYY:". The top right displays the same information it did when the program first started, but these items become active during processing. B.A.D. displays the elapsed time of the processing, something called E.T.C., which shows the Estimated Time for Completion according to the system clock and a percentage meter that shows the progress of the processing in a more graphic manner.

The center of the screen shows the grid, a colorful graphic representation of what is happening to your disk or partition as it is being optimized. This is similar to the display that Quarterback Tools uses. B.A.D. adds the use of color to further inform the user of the progress of the optimization. Blue cells indicate free disk space, while red, orange, yellow, dark green, and light green indicate varying stages of completion. I don't see the need for three different ways of monitoring B.A.D.'s progress, but maybe some people have trouble reading a gauge.

## AUDIO GALLERY



**Audio Gallery**

Pinyin: English: Chinese: 眼睛

**Yǎnjīng**

**Eye**

**眼睛**

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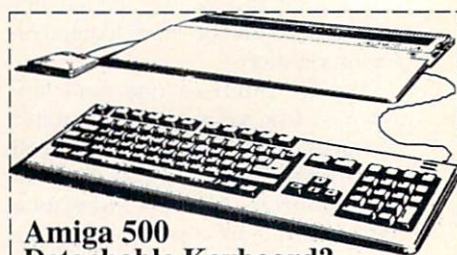
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When the blitzing is done, B.A.D. beeps and puts up an "Operation successfully completed!" requester. All that's left for you to do is to open all the windows on your newly processed disk so that Workbench can re-write the .info file for the disk, directory, or partition. If you don't do this, Workbench won't know that the blitzing has taken place. The first time Workbench writes, the .info file takes a bit longer than subsequent reads, but from then on it's speed city.

As an example, I took a standard Workbench 1.3.2 disk, processed it in the default (W.B.) mode and compared the access time of the original disk with the B.A.D. copy. It took about 10 seconds for the original disk to open completely from the Workbench, and about three seconds from the CLI using the Dir command. The B.A.D. copy opened in five seconds and two seconds respectively. The processed disk caused less gronking and disk-thrashing as well. That's not the "up to 500%" improvement hawked on the cover, but I'll take a 50% and 66% savings over nothing anytime. This can become a truly significant statistic when you process a 40MB hard drive or a really fragmented floppy.

What won't B.A.D. do? It won't process any non-AmigaDOS disks for starters. This means that you can't process disks that use disk-based protection schemes. This is unfortunate, because these are usually the noisiest disks





**Books and Quick  
References for Graphics**

- Vidia Guide to Professional Page 6.95
- Vidia Guide to PageStream 6.95
- Amiga Graphics Reference Card 2.95
- Amiga Programmer's Quick Reference 7.95

Circle reader service # for free catalog.

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you'll own. Even though you can work with MS-DOS and MacIntosh disks on your Amiga, you won't be able to blitz them with B.A.D. You'll need an MS-DOS or Mac disk optimizer to process them. An interesting side note is that 3.xx versions of B.A.D. would recognize Dlx: devices as physical floppies. Icons for these MS-DOS devices would be displayed as hard drives. B.A.D. declined to process the disks, however. The only other disk I've run into that B.A.D. won't process is the Kickstart disk.

There was a problem using B.A.D. with the C Ltd. autobooting controller. It appears that this controller uses position-dependent files to perform its autoboot. When B.A.D. finished re-organizing the disk, the controller couldn't find the files for autobooting. This is not a problem with B.A.D. It is an unusual method of autobooting, so that C Ltd. provides a fix for it on the original install disk that comes with the controller. The fix is also documented in the C Ltd. manual.

The people at M.V. Micro are already planning new features for their baby. B.A.D. is ready to process floppies in FFS when this becomes standardized and available under 2.0. Script files for Cron-based processing will be supported as a CLI-passed function. Being able to have B.A.D. disable caching programs before processing and restart them when through will be a real time-saver.

What could be done to improve B.A.D.? Lots of little things. The messages that appear during processing are not as informative as they could be. What are stray directories? Why does B.A.D. format the disk after processing? There aren't any references to these messages in the manual but there should be. The gauge will sometimes read 100% complete before B.A.D. finishes. The Version file correctly points out that AmigaDOS is likely to GURU if you insert two disks with identical names into your drives. Unfortunately, and unlike the AmigaDOS Copy program, B.A.D. will rename the processed disk with the same name as the original disk. B.A.D. should rename or add a suffix to the processed disk to avoid the "two disks-same name" predicament. It is true that it could be disastrous to abort B.A.D. while processing. However, there should be a way to cancel the processing before starting, like when the query pops up. And why not have the ability to choose and save preferences setups? This would let you save your favorite method of blitzing as the default.

The authors make a convincing case in the manual for not automatically trying to fix problems when they are encountered. Since B.A.D. requires a separate program to fix the errors it finds, some kind of hot link—either an AREXX port and script or some small program—to connect B.A.D. with the sector editor of your choice would be in

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order. While it is good to know that the staff at M.V. Micro is there to help you, an example of a problem and a tutorial walk-through of sector editing would be helpful. I fear most users will be either too intimidated by the process to take a crack at it themselves or too reluctant to make that long distance call.

Customer support is very good, and the program has had all obvious bugs shaken out. With over 9000 copies sold, it has to be one of the best-selling utilities for the Amiga. Commercial licensing is available. If I ruled the world, I'd require all disks produced for the Amiga to be processed with B.A.D. before sale or distribution.

B.A.D. is easy to use and yet produces tremendous benefits with a short learning curve and little or no risk. I shudder when I think of all the time I used to spend listening to my disks grind, waiting for programs and files to load. This is as simple a cure to the disk-thrashing blues as I've seen. Considering the alternative, I'd say one of the best ways to be good to your Amiga is to get B.A.D.!

•AC•

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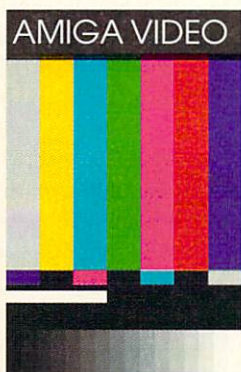
# Professional Rendering and Animation with LightWave 3D

BY MARK THOMPSON

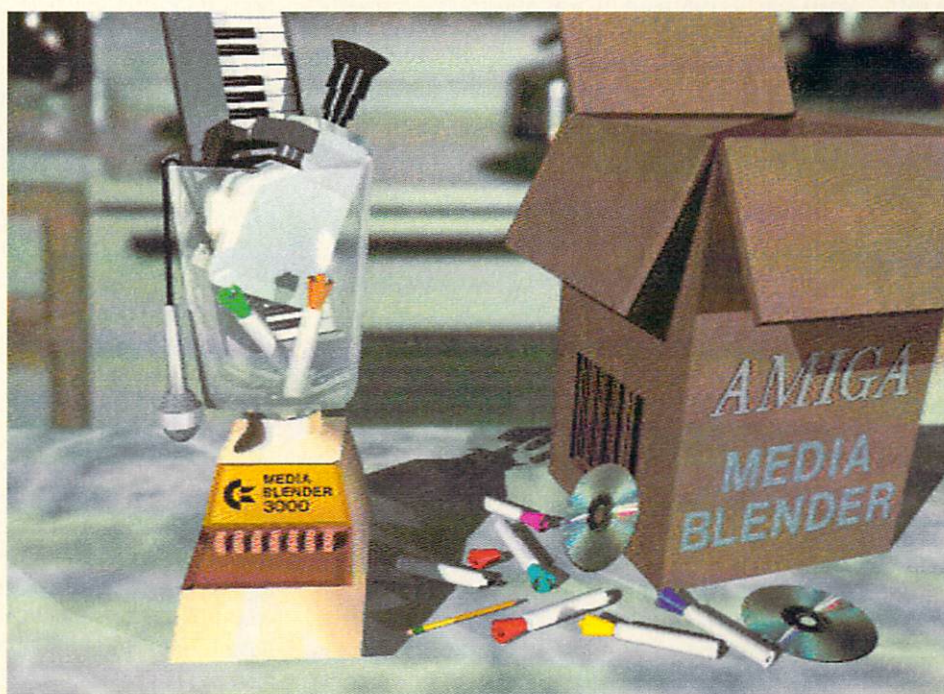
Unlike most other computer platforms, the Amiga is rather peculiar in that the majority of the 3-D graphics packages available are ray tracers. This is perhaps largely due to the fact that the Amiga's HAM resolution was limited to 320 x 400, thereby keeping ray-tracing times modestly manageable. Ray tracers are painfully slow, "brute force" programs that attempt to emulate in software the way light behaves in the real world. While they are not entirely accurate (they cannot model lens or prism optics), the traced rays do traverse a path similar to actual light yielding a simple method for refraction, reflection, and shadows.

Three-dimensional graphics on other systems—particularly professional animation packages—avoid ray tracing and emphasize a scanline-based rendering approach. Scanline methods attack the problem in a far more efficient manner, striving to create realistic images without actually modeling the physical behavior of light. While scanline methods don't provide refraction and true reflection, they can be magnitudes faster—an important consideration when creating animations. Aegis' VideoScape (now sold through Oxxi/Aegis) and Octree Software's Caligari were the first Amiga products to buck the ray-tracing trend, followed shortly thereafter by Progressive Peripherals & Software's 3-D Professional.

The latest in this breed is LightWave 3D, the three-dimensional animation package supplied with NewTek's Video Toaster. In this article I will discuss many of LightWave 3D's powerful features but, more specifically, I will concentrate on its undocumented capabilities and methods.



The Video Toaster's LightWave 3D simulating reality in the form of a kitchen colleague (not to be confused with Progressive Peripherals' Video Blender).





## Object Modeling and Conversion

The front end to nearly any 3-D animation package is some type of object modeler. While LightWave 3D is accompanied by a very functional modeler, it doesn't yet possess the bounty of features that can be found in, for instance, Impulse's Imagine. For this reason, many LightWave 3D users have chosen to do their modeling in Imagine and then import the objects to LightWave 3D for rendering.

Using InterChange and the TurboSilver 3.0 module, both from Syndesis, Imagine objects can be converted to



Figure 1: The center sphere demonstrates simulated environment mapping while the movie light uses the reflected image of white "blobs".

either Sculpt-Animate (Byte by Byte) or VideoScape formats which LightWave 3D can read in. Sculpt format is perhaps preferred since it can better accommodate the surface attributes assigned in Imagine. However, VideoScape format can be read directly into the LightWave 3D modeler for further modification or surface naming. Sculpt objects must first be saved from within LightWave 3D before the modeler can read them.

## Metamorphosis

One of the more powerful methods of animating objects is achieved through morphing. However, the current software only supports a morph to a single target. Object Dissolve allows you to avoid this limitation. To accomplish a multi-target morph, load in all the objects involved in the morph. Then, for each object set up a Morph envelope that will transform it into the next target in the sequence. Finally, create an Object Dissolve envelope for each object such that it is only visible during its respective Morph envelope. Unlike the Morph envelope, the Object Dissolve envelope will be a step function, going from 0% in one frame to 100% in the next.

Another limitation of morph is that the target object must essentially be the source object with only the vertex locations altered. In other words, the target must be derived

from the source with no points added or deleted. Here once again, Object Dissolve can help out. In this case, two morphs occur simultaneously on top of one another while Object Dissolve smoothly fades out one morph while fading in the other.

Two objects must be created in addition to the source and target. For Object #1, you must manipulate the source to fit the approximate shape and size of the target object without adding or deleting points. Object #2 is merely the reverse operation to make the target look like the source. The two simultaneous morphs performed are source -> Object #1 and Object #2 -> target. Then dissolving the source out and Object #2 in will complete the illusion. Similar techniques have been used recently in television ads (e.g., the "mini-van metamorphosis" commercial for Chrysler).

## Metals and Chrome

It seems that the first thing most people do when they get their hands on a ray-tracing program is create reflective chrome spheres. In non-ray-tracing renderers like LightWave 3D there are a few ways of mimicking the effect—namely, reflection mapping and environment mapping.

Professional systems use reflection mapping extensively because it provides a realistic look for a relatively low computational cost. It involves creating an image that typically contains either smooth color gradients or possibly a snapshot of the scene. Said image is then wrapped onto the object surface. Just a few fuzzy black blobs on a white background can create a very convincing metallic surface when using reflection mapping. Environment mapping goes one step further by automatically creating an image that depicts the entire scene in all directions from the object's point of view. To accurately depict reflections with moving objects, an environment map must be created for each frame of the animation.

Since LightWave 3D does not currently support environment mapping you must manually create the environment image. This can be accomplished by placing the camera in the object's location but aimed in the negative Z direction (note that reflection images use a spherical projection relative to the Y axis with the seam pointed in the positive Z direction). Set the camera zoom factor to a suitably low number depending on the radius of curvature on the object's surface. For a planar surface, the default setting is probably fine. However a setting of 0.4 to 0.7 might be better for a sphere.

Simulating reflection in this manner can cost effort and rendering time so keep in mind that using simple gradients, blobs, or even just a single rendering of the scene can be very effective. Figure 1 shows an example of both simple reflection mapping and simulated environment mapping. Another characteristic of chrome and other metals is that they tend to have specular highlights that reflect their own surface color as opposed to the light color as is the case with plastic and wood. Therefore, metallic surfaces in LightWave 3D should have the "Color Highlights" button enabled. This is particularly true of colored metals like brass, gold, or copper.



## Digitized Textures

Because LightWave 3D has the Video Toaster's frame grabber at its disposal, you have access to a nearly endless array of image textures. A great source for digitizing is a book by Phil Brodatz entitled *Textures* (Dover Publications). It contains 112 images of surfaces ranging from crocodile skin to rattan to woven brass mesh. Although the images are in black and white, they can be easily colorized in Toaster Paint or used as greymaps for the other mapping functions like Transparency or Bump Map. For textures that require only a single color like rattan, the greymap can be used to modulate the diffuse lighting, while Color is assigned a constant. A future release will support 8-bit greymaps (as used in ASDG's The Art Department) providing smooth mapping functions without the memory expense of 24-bit images.

## Glow and Glass

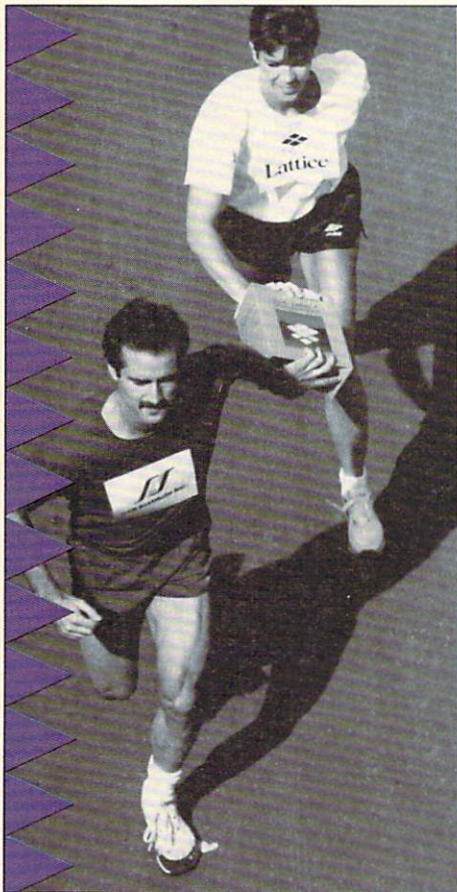
One of LightWave 3D's unique features is the Edge Opacity selection. Most Amiga 3-D graphics packages provide full control over surface transparency, but Edge Opacity adds to this the ability to simulate varying densities. One application is the creation of glow effects. To make a glowing ball create an object made up of two spheres, one of which is half the size and in the center of the other.

Assign each sphere different surface names. For surface attributes, make the outer sphere luminous, no diffuse or

specular, 25% transparent, clear edges, and smoothing enabled. Make the inner sphere the same except use no transparency and normal edges. The result is a nice white (or whichever color you choose) glowing orb. Similar techniques can be used to create light/laser beams, planetary atmosphere, rocket/jet exhausts, and many others.

Another application for Edge Opacity is simulating glass. One's first inclination for making a glass object is some level of transparency combined with a specular highlight and some reflectivity. Frequently however, the result is a flat appearance because just a simple surface transparency yields a uniformly transparent object. In other words, the object looks more like it is fading away rather than made of glass. Real glass objects are typically more opaque at the edges because of the incident angles made with the refractive material and, in the case of hollow objects, there is more material for light to pass through.

LightWave 3D is not yet capable of refractive effects but, by setting the Edge Opacity to Opaque, it will mimic this particular phenomenon. Setting a sphere to be 100% transparent with opaque edges will be roughly equivalent to 70% transparency with normal edges except the former will more closely resemble a hollow 3-D glass ball. As the surface becomes more complex, opaque edges can become less effective, but for most simple surfaces they do the trick. To further enhance the effect of simulated glass, Color Filter may be



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enabled to tint the light passing through the object the same color as the glass surface. Figure 2 illustrates four examples of creating glass surfaces.

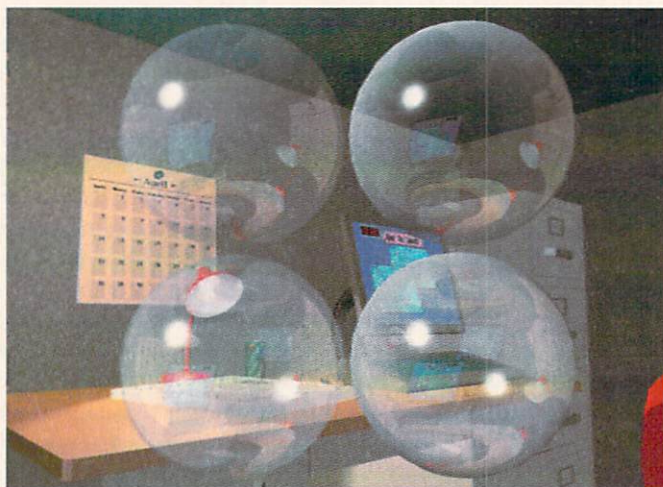
## Decals

While on the subject of transparency, I'd like to mention transparency mapping. The foremost use of this feature is probably masking. A picket fence, for example, could be created by arduously modeling each individual slat of the fence. A simpler method merely involves creating a black-and-white mask that represents the gaps in the fence and using that as a transparency map for a single fence-sized box (with the thickness of a slat).

Another mask operation is the use of "decals". It is often desirable to put text or some type of label on an object but allow the surface underneath to show through. By creating a mask that is black wherever the text/label is, it can be used as a transparency map to make only the desirable text/label portion visible. The map can be applied to a single rectangular detail polygon that is attached to the surface.

## Rocket Blasts

A possibly less obvious use of transparency mapping is to vary an object's apparent density. For example, a simulated rocket blast might be fully opaque at the end of the exhaust but gradually become totally transparent at the bottom of the blast. There are several ways to achieve this including an image map and using Texture Falloff. This effect works well when viewed from the proper angle, but when the view shifts toward the fully transparent end the object will appear to disappear if it is made up of one-sided polygons. Back face culling will remove the more opaque polygons from the other side of the blast leaving only the transparent ones at the bottom. These, of course, are invisible so the object disappears.



**Figure 2:** Different methods of creating glass; clockwise from upper left: one-sided polygons with normal edges, one-sided with opaque edges, two-sided with opaque edges, two-sided with normal edges.

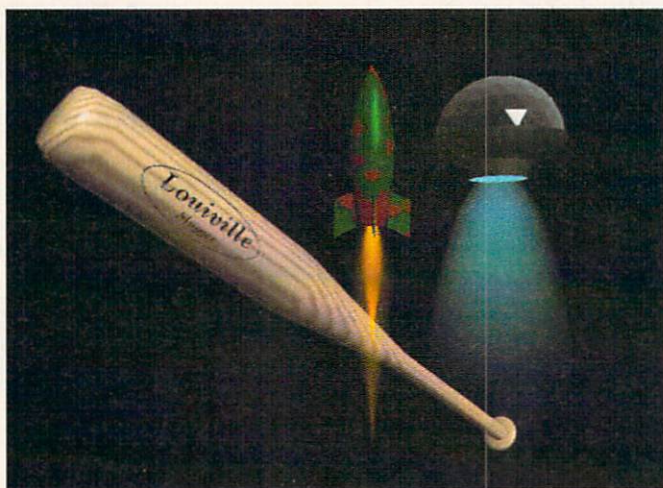
is perhaps one of my favorites. Fractal noise can produce a pseudo-random modulation of color, diffuse lighting, specular lighting, transparency, reflection mapping, and bump mapping. The manual mentions using it for things like rust, dirt, or natural-looking simulated terrain, but that's just the tip of the iceberg. Some textures I've implemented with fractal noise include flames, smoke, clouds, patchy fog, and comet trails as well as simpler surfaces like carpeting, stucco, or stone.

What really makes fractal noise so much more powerful than an image map, however, is the ability to give it a 3-D velocity vector that will not repeat on itself. For example, you could apply an image map to a surface that when given a velocity looks like a flickering flame. However, the flicker pattern will repeat as soon as the image map has moved a distance equal to its size (depending on the velocity), creating

a monotonous and mechanical look. Fractal noise, on the other hand, is a procedural texture and will not repeat.

I incorporated the use of animated fractal noise in an industrial cityscape to produce the image of dark, sooty smoke. To create the object, I stretched and manipulated a sphere until it looked like a somewhat fat, irregular, upside-down teardrop. Fractal noise color and transparency were then applied, as well as clear Edge Opacity. The colors assigned were two dark

**Figure 3:** Baseball bat with transparency mapped "decal", rocket flame with glow, and blast with mapped falloff of transparency.





shades of gray and a Y velocity of a few feet/second made the smoke appear to rise. Smaller X and Z velocities were added (about 1/10th that of Y) to provide a little variation. Similar, but not identical, velocities were assigned to the transparency which ranged in value from about 0% to 75%. These settings produced a very convincing smoke effect. Combining a luminous orange fractal noise teardrop with the glow effects mentioned above produces a nice candle flame.

While working on such a flame, I encountered a problem I should mention. I had wanted to use some transparency on the flame and surround it with an almost totally transparent glow. Unfortunately, the method LightWave 3D uses for hidden surface removal (a Z-buffer combined with depth sorting) does not cope with overlapping transparency well. The result was a small black polygon at the base of the flame. Should this artifact rear its ugly head in your image, it can be combated by subdividing the offending transparent polygons. In any event, the possibilities with fractal noise are nearly endless.

### Animation within Animation

Image sequence is one of the late additions to LightWave 3D 1.0 that didn't make it into the manual. It can be used just like regular images except that for each frame in the animation, the next image in the sequence is used. Each image in the sequence can be made up of any number of bitplanes and be any dimension regardless of the other images in the sequence. The only requirement is that the images be given a name in the form filenameXXX where XXX is a three-digit numerical sequence. The image used for any given frame in an animation will be the frame number plus the image offset. Any frames that do not have an image defined for them will use the previously loaded image; the sequence does not loop. This way, a 15-fps (frame-per-second) image sequence can be mapped into a 30-fps animation by giving the images in the sequence odd-numbered filenames. Image sequence looping is an upcoming feature of LightWave 3D.

### Exploding Particles

Another largely undocumented feature of LightWave 3D is particle systems. Particles are nothing more than single-point polygons. They can be easily created in the modeler just as you would create any polygon except only one vertex is specified. They can be given surface attributes just like any polygon but what makes them unique is the ability to blur their motion. This is handy for modeling effects like explosions, stars, rain, waterfalls, etc.

For an explosion, create a large cluster of particles, shrink them down to a single point and then animate them, expanding rapidly with motion blur enabled and an Object Dissolve envelope to make the particles fade away. Having an object explode into fragments using a Polygon Size envelope can be combined with this effect as well as an expanding gas cloud or shock wave. Waterfalls present more of a challenge. Since each particle really needs its own defined path,

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it would be easier to write your own program to do all the particle manipulations for each frame in the scene and simply use LightWave 3D as the renderer.

### Going to Videotape

When it comes time to render an animation there are several possible choices. Videotape is the medium most LightWave 3D users will render to and, combined with a single-frame controller, any number of insert edit-capable machines can be used. A couple in the lower cost S-VHS format include the JVC BR-S811U and Panasonic AG-7750. Both are priced in the area of \$6,000 and the Panasonic includes a built-in TBC (Time Base Corrector). JVC has a new S-VHS offering (approximately \$2,000) that was designed with computer interface in mind. It is purportedly capable of recording single-frame animation without the use of a single-frame controller. It remains to be seen how well such a low-priced deck can handle such a strenuous task.

### Recordable Videodiscs

Unlike most VCR's, videodisc recorders do not require single-frame controllers and can make the task of recording an animation very quick and simple. Writing a frame to the videodisc is instantaneous in contrast to editing VCR's, which



require several seconds of pre-roll per frame. The three major players in the recordable videodisc market are the Panasonic TQ-3038F, Teac LV-210A, and Sony LVR-5000/LVS-5000 combination. All are priced close to \$20,000. All three accept composite video input; the Panasonic and Sony also accept RGB.

It should be noted that none of these units actually record RGB video to the disk. However, Teac's latest offering, the LV-250SCR (priced under \$30,000), will do exactly that. By saving LightWave 3D frames as 24-bit IFFs, sequencing them out to an RGB frame buffer (like the Colorburst or Firecracker 24), and recording them on the LV-250SCR, video animation of spectacular quality can be achieved. The disc output can then be transcoded for live broadcast or to any other high-end format like D1, D2, 1", M-II, or Betacam SP. NewTek plans to address the high-quality output issue by providing direct D2 output (digital composite).

Videodisc recorders possess another advantage over tape: highly flexible playback. With a simple script program, a videodisc recorder under computer control can alter frame rate, pause, loop, or reverse direction on any frame or set of frames without any degradation in image quality. This can be very useful for making the most of limited rendering time or compensating for timing mistakes.

On my last project I needed approximately one minute of animation but because of time constraints, I could only render about 1000 frames (33 seconds). Judicious use of pauses, a few slower scenes, and a loop brought it to the desired length without any hassle. If purchasing a videodisc recorder is too much of a financial burden, you might consider renting studio time (studio rental fees will typically fall in the range of \$50 to \$100 an hour). If you are well organized, you can dump 300 frames to disc in half an hour including setup time. The discs themselves run about \$300 but they hold 50,000 to 100,000 frames (depending on make and manufacturer).

## ***HAMination***

Either because of cost or effort, it is often desirable to assemble an animation without single-frame recording. While NewTek made no provision for such capability, rendering the frames to 24-bit IFF provides the flexibility needed to accomplish this goal. One possibility is to use a converter capable of creating standard Amiga format images from 24-bit IFFs. These include ASDG's The Art Department, Art Department Pro, and Active Circuit's Image Link. ADPro makes the job easy by providing an ARexx interface for fully automated conversion. Then any standard animation assembly software can be used to compile the converted frames. The drawback to this method is that more often than not, standard Amiga view modes just don't do your 24-bit animations any justice.

## ***Big Color at a Small Price***

Enter DCTV. By using this Amiga display "converter", not only can your animations be played back in real time in full color but they can also be directly recorded to videotape. This can be very valuable for test animations that must

closely depict the final product for yourself or as a preliminary mock-up for a client.

A single batch command supplied with DCTV will convert all your 24-bit frames to DCTV display format. To compile the frames into an animation, I use PageFlipper Plus FX, but many other programs work in this regard including DeluxePaint III and the PD program MakeAnim. To assure smooth 30 fps motion even with large frame-to-frame deltas, the conversion should be done using 3 bitplanes with a size of 640 x 200. The command syntax is: `spat ifftodctv animname??? -d3 -w640 -h200`, where animname is the file name prefix for each frame. When image accuracy is of greater importance than speed, the command options "-d4 -w704 -h480" would be more appropriate. This increases the depth to 4 bits with hi-res overscan. A width of 704 is recommended rather than 736 because several anim builder and player routines seem to choke on severely overscanned DCTV images.

There is a caveat, however, to using DCTV and that is it tends to interfere with the Toaster. When DCTV is connected to the RGB port, Toaster images can exhibit a sort of video "sparkle" almost as if a luma key on white were being performed. Images that display this defect will also be saved this way so it is important to disconnect DCTV during any final rendering. Also, it should also be noted that, although both the Toaster and DCTV are full-color composite video devices, the image quality of DCTV cannot compare to that of the Toaster. Perhaps the most noticeable artifacts when loading a LightWave 3D image into DCTV are rainbows in areas of higher contrast and detail, and color banding in areas of slow smooth color shading.

## ***Fast, Faster, Fastest***

While LightWave 3D is significantly faster than other 3-D packages on the market, it can still take many minutes (or even hours) for an image to be generated. Here are a few things to keep in mind to help speed things up a bit. First is the use of foreground and/or background images. It is very common in a scene for only a few objects to move and interact while the rest remain static and unaffected. Considerable time can be wasted recreating the static portions of an image that may not change over many many frames in an animation, particularly when the camera is motionless and there is not a great deal of shadow interaction. You can take advantage of this by removing all the dynamic objects from the scene and rendering a single frame to an IFF. Then reload the scene, delete all the other objects, and load the previously rendered image as a background. While complex scenes will exhibit the greatest reduction in rendering time per frame, even simple ones can benefit. Similar tricks can be performed with foreground images.

Another method for reducing rendering time involves rendering compute-intensive surfaces to image maps beforehand. One example of a compute-intensive surface is one with multiple texture map definitions. Such a surface might have a procedural marble color, image-mapped diffuse lighting, and fractal noise bumps. Other compute-intensive surfaces are procedural textures like wood, marble, and fractal



noise that have the frequency specification set high, say greater than 3 or 4.

If a compute-intensive surface fills a large portion of the camera view and it is static (the surface does not move relative to the object), then it may be advantageous to render this surface definition to a flat, evenly lit plane perpendicular to the camera and save it as an IFF. Then, for your object, replace the compute-intensive surface with a color image map using that IFF. This can save a substantial amount of time. If the image is a repetitive one, it may be desirable to cut out the repeating portion in Toaster Paint and save it as a brush instead of using the whole image (which can greatly conserve valuable memory). You can also use The Art Department to scale image maps down that don't require much detail (also a memory-saver). Something else worth considering is the use of non-24-bit images (like HAM, half-brite, 32-color, etc.) for mapping surfaces that don't require all the extra color resolution. This will save memory as well as decrease rendering time.

## Shadow Control

A third technique for speedier rendering uses another undocumented feature of LightWave 3D, Object Shadow Options. This feature allows for complete control over which objects will cast and/or receive shadows. There are often instances in a scene where some objects cannot possibly cast or receive a shadow. By disabling those options that are not possible, costly shadow calculations can be avoided.

Take, for example, a scene in which a sphere is hovering over a ground plane and is lit from a light source above. Because of its shape, a sphere cannot cast a shadow on itself. Also the overhead light will prevent it from receiving a shadow from the ground, but the sphere will cast a shadow. Therefore, only Cast Shadow should be selected. Conversely for the ground object, only Receive Shadow should be selected (it also cannot cast a shadow on itself regardless of light placement). An example of an object that can "self-shadow" is the PottedPlant included with LightWave 3D. Shadow casting in LightWave 3D uses ray-tracing techniques which can add a huge time penalty to rendering. Therefore, carefully determining which shadow options are really necessary for each object can have a tremendous impact (provided shadows are enabled, of course).


## Conclusion

All in all, the next release of LightWave 3D promises to be much more than simple bug fixes and minor enhancements, with planned features such as depth of field effects, full-motion blur, ray-traced reflection and refraction, spherical and cylindrical image bump mapping, and tiling options for cylindrical and spherical image mapping. But even with the program's current feature set, there are endless possibilities for new and interesting effects. I have but touched on a small subset of them.

Do not limit yourself to tutorial techniques. By wildly experimenting, you may achieve results that even the program's author did not anticipate. If you are one of those fanatics who believes anything short of full ray-tracing is a

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cheat, check out LightWave 3D. It will change your definition of professional 3-D rendering and animation. In closing, I would like to thank Allen Hastings of NewTek for his technical advice.

•AC•

## Author's Info

Mark Thompson is a computer architect who has been designing graphics and imaging hardware and software for nine years. He is a six-year Amiga veteran and currently runs Radiant Image Productions in Merrimack, NH, which specializes in Amiga 3-D video graphics animation.

Please write to Mark Thompson c/o Amazing Computing,  
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# PD Serendipity

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## Insight into the World of Public Domain Software for the Amiga

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### **BBFormat**

If you're like me, you have a box stashed away somewhere with the label "Bad" on it containing those disks that all of sudden have become defective but you just can't seem to part with. Well David Varley has an answer for us—BBFormat.

BBFormat, which stands for Bad Block Formatter, will format a disk and "block" out the bad areas. This makes the disk useable again. Wow! Your disk is cured. Well, almost. Although it is useable, you do not have the same amount of disk space as a newly formatted disk. The disk is useful, however, for storing small data files and such.

BBFormat will block out all disk errors (read, write, verify). Blocking these bad areas causes the areas to be skipped when encountered, thus allowing the disk to be used.

One nice feature of BBFormatter is the option to print the bad blocks file created when formatting a disk. Now you can see which blocks on the disk are bad. Another feature, which isn't quite running just yet, is the RAW option. RAW attempts to make note of those tracks that are selected to get a valid read more than once. If you have ever used a copy program whose screen is a mapped out

version of the tracks on a disk, you know that it will sometimes try a track more than once to get a valid read. Although the read is considered successful, it would be useful to know there was trouble in getting it.

BBFormatter is a small, easy-to-use program. Not being Intuitionized, it isn't fancy but gets the job done. If your "Bad" box is as big as mine, it's worth checking out. *BBFormat can be run only from the CLI/Shell. It can be found on Fred Fish Disk #493. Author: David Varely*

### **AmiGantt V4.00**

We all remember Henry Gantt, a major contributor to scientific management who developed the Gantt chart. The Gantt chart is Henry's response to increased worker efficiency. Still used today, the Gantt chart provides managers with an easily-understood summary of projects being worked on, of what has to be done in a certain time frame, of what has been completed, and by whom. In simpler terms, it is a manager's tool for scheduling and organizing time—a great tool for managers to effectively use their resources.

The one drawback to the Gantt chart is that it doesn't contain any info on how certain tasks being performed are interrelated. Thus, came about the PERT chart. The PERT chart visually displays project tasks, the estimated time to complete the task, and the relationship among the tasks that must be completed to finish the project.

With all that said, Donald Tolson presents to us AmiGantt, the Gantt chart for the Amiga. Like Henry, Donald wants to provide an easy-to-use method of tracking tasks, and estimating their time and their resources.

AmiGantt can be run from the CLI or Workbench, it multitasks, and has an Intuition-based interface complete with pull-down menus.

---

by Aimée B. Abren

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When run, AmiGantt will prompt you with the main screen. On the side you will see numbers incremented downward. These are the task numbers for your project. The space beside each number is where you would type the task name. At the top of the screen there is a calendar to help keep track of the progress of all tasks. There is a limit of 500 tasks per project and you can have 10 dependent sub-tasks per task—dependent tasks can't start until the previous task is finished—and 10 resources per task. This should give you plenty of room to make your chart as detailed as needed.

If the Gantt chart isn't enough, AmiGantt allows you to print PERT charts and resource histograms. Other nice features are that icons are created for each saved project (optional) and if you're running low on memory, you are prompted for a clean exit.

For those of you who have previous AmiGantt versions, version 4.0 is an update to the previous version. Changes in Resource information now include "percentage use" to define how much of someone's time is put into a task. Also the PERT chart uses Helvetica 9 because the printouts look more attractive with this font. AmiGantt 4.0 also includes an ARexx input port that will allow you to run certain functions of AmiGantt from an ARexx macro.

Although I touched only briefly upon AmiGantt, you should be able to see the purpose of a Gantt chart as well as its benefits. I will, however, go into AmiGantt in greater detail at a later time.

*AmiGantt V4.0 can be run from Workbench or CLI. It can be found on Fred Fish Disk #493, and is an update to version 3.0 on Fred Fish Disk #248. AmiGantt requires the ARP library.*

## Updates from the latest Fred Fish Disks—#491 to #500

**DICE V2.06.21**, an Integrated C environment, can be found on Fred Fish Disk #491 and is an update to V2.06.15 on Fred Fish Disk #466. *Author: Matthew Dillon*

**LoanCalc V1.4**, a mortgage utility, can be found on Fred Fish Disk #492 and is an update to V1.2 on Fred Fish Disk #366. *Author: Robert Bromley*

**AmiBack V1.03**, a backup utility, can be found on Fred Fish Disk #493 and is an update to V1.0 on Fred Fish Disk #447. *Author: MoonLighter Software*

**AmiGantt V4.0**, a management tool program, can be found on Fred Fish Disk #494 and is an update to V3.0 on Fred Fish Disk #248. *Author: Donald Tolson*

**BizCalc V1.1**, a loan calculator, can be found on Fred Fish Disk #494, and is an expansion of MortCalc 2.5 on Fred Fish Disk #385. *Author: Michel Laliberte*

**Bref V2.0**, a AmigaBASIC code cross reference program, can be found on Fred Fish Disk #494 and is an update to V1.0 on Fred Fish Disk #283. *Author: Dick Taylor*

**ButExchange V1.1**, an input handler to help left-handed users, can be found on Fred Fish Disk #494 and is an update to V1.0 on Fred Fish Disk #483. *Author: Preben Nielsen*

**InputLock V1.1**, an input handler to lock the keyboard, can be found on Fred Fish Disk #494 and is an update to v1.0 on Fred Fish Disk #483. *Author: Preben Nielsen*

**PicSaver V1.1**, a screen saver utility, can be found on Fred Fish Disk #494 and is an update to V1.0 on Fred Fish Disk #483. *Author: Preben Nielsen*

**PWKeys V2.0**, an input handler that allows you to manipulate windows by using the keyboard, can be found on Fred Fish Disk #495 and is an update to V1.0 on Fred Fish Disk #483. *Author: Preben Nielsen*

**AnalytiCalc V25-03B**, a spreadsheet program, can be found on Fred Fish Disk #495 and is an update to V24-01a on Fred Fish Disk #328. *Author: Glenn Everhart*

**AvailMem V1.12**, a free memory counter program, can be found on Fred Fish Disk #496 and is an update to V1.03 on Fred Fish Disk #285. *Author: Dave Schreiber*

**MemMometer V2.20**, a memory usage display program, can be found on Fred Fish Disk #496 and is an update to V2.10 on Fred Fish Disk #350. *Author: Howard Hull*

**DigLib**, an Amiga device independent graphics library for Fortran applications, can be found on Fred Fish Disk #499 and is an update to the version on Fred Fish Disk #267. *Authors: Hal Brand, Craig Wuest, James Locker, and Mike Broida.*

**Matlab**, a Fortran package, can be found on Fred Fish Disk #499 and is an update to the version on Fred Fish Disk #267. *Authors: Jim Locker, Cleve Moler, and Mike Broida.*

•AC•

*Please write to Aimée B. Abren c/o Amazing Computing, P.O. Box 869, Fall River, MA 02722-0869.*



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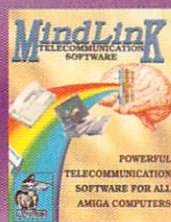
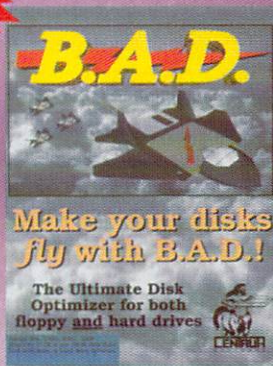


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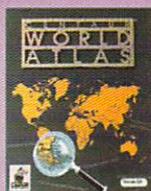
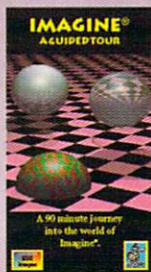
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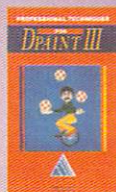


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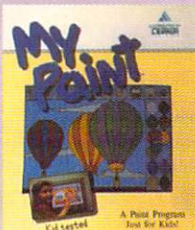
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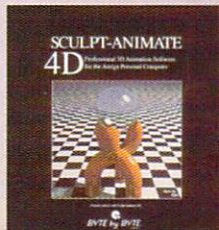
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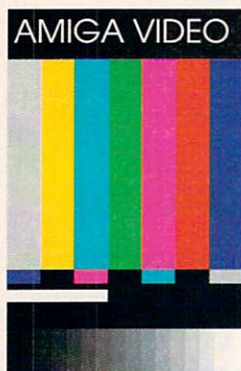
THE DISC COMPANY'S

# AlterImage Video F/X

by Frank McMahon

WHOEVER SAID that a picture is worth a thousand words was probably not into video production. Today's information-driven society demands data in the form of text and graphics along with its consumption of broadcast media. Amiga video producers know this all too well, their

first purchase, after a genlock, usually being a character generator. Unfortunately these massive four-disk, 30-font, 200-page-manual programs are almost always overkill to the user who just wants to know what's going on in his/her video with some basic "supers." That's where AlterImage Video F/X comes in. It has you going in minutes rather than hours and sports many features including effects, rolls, crawls, and built-in genlock control.



The font requester along with the F/X panel and page control icons are all easily controlled with the mouse.

After a brief run-down of what "Desktop Video" is, the manual gets down to hardware hook-ups. Diagrams point out how to hook-up the AlterImage Genlock. This genlock is sold separately and the AlterImage Video F/X program allows limited control of the genlock from within. Any Amiga genlock can be used by using the respective controls on the unit or multitasking with genlock supplied software. The SuperGen by Digital Creations, however, hits a snag. Control signals sent by the program confuse the SuperGen during scrolls, resulting in your video underlay being blacked out. According to a spokesperson, The Disc Company plans to correct this problem in a future update. Even if you don't have a genlock, you can still use all of AlterImage's features for producing text, title screens, and presentations. Following the genlock instructions are sections on backing up your disks (three disks including a program disk, font disk, and clip art disk) and hard-drive installation.

The longest part of the manual is a series of short, logically-arranged tutorials that breeze you through just about every feature in the program. Because of the excellent design, you will most likely complete two tutorials and have enough knowledge to skip the rest and learn the program on your own in under 20 minutes.

## THE EDIT PANEL

On-screen are three menu panels, the Edit panel, the F/X panel, and the Page Display Control panel. From the Edit screen, all you have to do is jump in and start typing. There is no automatic word wrap so you must hit return to proceed to the next line. Lines can be moved around a pixel at a time by using the Amiga keypad. This is a handy feature if you suddenly decide your text should go on the bottom of the screen rather than the top. If the user hits the return key a few times, the text will reach the bottom. All text is done in hi-res (640 x 400) and the screen



size and resolution are not user-adjustable. While the lack of overscan is not a big concern since the program is designed to show video through color 0, it does mean there are no provisions for starting completely off-screen when producing rolls and crawls with AlterImage. The effects all happen within the 640 x 400 screen.

The Edit Menu gives complete control over justification, allowing setting beforehand or going back and automatically aligning text on a line-by-line basis. A counter lets you know exactly on which line you are currently typing. A Color requester allows text to be up to eight different colors (from 4,096) which can be changed at any time. Sliders for Red-Green-Blue and Hue-Saturation-Volume are supplied. I found it strange that although you could slide the R-G-B sliders and see the colors change, you could not do the same with the H-S-V. H-S-V had to be continuously clicked and, if slid, the color would not change until the mouse button was released. Color control is vital in text video work and this could have been made a little easier. Swap, copy color, spread, and other standard color features are pretty much absent, following a steady stream of publishers who work on fancy features and forget about palette manipulation.

OK, now that I've made my palette speech, it's time to move on to the most important part of any CG program—the text! The Font requester is easy to use and allows pre-loading fonts into RAM. How do the fonts look? Well they look excellent if not similar. Range was not a consideration and I found myself going through the modest supply, hoping for something out of the ordinary. But in the looks department, they are among the best I've seen. Nice and bold. Limited jaggies with fine design. Unfortunately, AlterImage is not Amiga Font compatible (or ColorFont), which limits it to some respect. It's certainly nothing new to have a CG program support only its own fonts, but the lack of style range and font size

(they're all pretty much in the 30-40 point size) leads me to hope the company has some plans for additional font sets.

The Graphics Box Button supplies a crosshair which allows drawing of a solid color box (from the set of eight colors) in any shape. Boxes as well as clip art—which we'll get into later—have a 200-pixel/line height limit in AlterImage. The program actually has

providing icons to Load, Save, or Delete a Script, Palette, or IFF Graphic. Graphics created in programs such as DeluxePaint III can be easily loaded in on any page and placed anywhere. A disk full of excellent clip art is supplied, and the manual presents each piece of clip art for reference. I couldn't find the artist's name in the manual but I would like to see more of this person's work on data disks.

## *AlterImage Video F/X is ideal for anyone in a hurry to create some text messages with basic graphics.*

three video levels. Text on top, followed by graphics, and under that, live video. So it's possible to draw boxes under the text as well as delete them without affecting your completed titles. Nice touch.

Also on the same panel is an Insert/Overwrite toggle. During Insert mode, text typed at the cursor will move the text to the immediate right while Overwrite mode erases existing text to the right to make room for the new.

### **THE PAGE DISPLAY PANEL**

All of your typed up pages are stored in order and easily recalled. The Page Display Panel provides most of the page commands for presentations called "scripts." Don't be alarmed; it's just an adjective and there is no actual scripting using a word processor. There is an icon to delete a page if you want to remove it from the current script as well as options to add and insert pages. A counter lets you know what page you are currently on. The panel contains VCR-like controls which allow you to go to the beginning or end of your script, move forwards or backwards page by page, or play your presentation from beginning to end. A Disk Access Button brings up a requester

There are a couple of drawbacks to clips though. They must only be eight colors and not over 200 pixels high. Also after loading in different clips to examine, I quickly discovered that each had a different palette, and since each script allows only one palette, it would be tough to have more than one clip in the same presentation without some remapping work done outside of the program. Palettes can also be saved and loaded. An entire typed screen with clips can be saved as an IFF compatible file. I've done this a couple times already, using the great included fonts to create titles, then loading them into another hi-res program to create shading and textures.

Genlock control for the AlterImage genlock is on the Page Display panel; it toggles between source tape only, text screen only, and combined source and text. Pin designations and other technical information is provided for those with the genlock.

### **THE F/X PANEL**

Here's where you get to add a spark to your created pages. Options are included that allow a typed-in page to scroll vertically up the screen from top to bottom as well as crawl horizon-





# Amazing Disks

1

## AC V3.8 and V3.9

**Gels in MultiForth Parts I & II:** Learn how to use Gels in MultiForth. Author: John Bushakra

**FFP & IEEE:** An Example of using FFP & IEEE math routines in Modula-2. Author: Steve Faiwieszewski

**CAI:** A Computer Aided Instruction program with editor written in AmigaBASIC. Author: Paul Castonguay

**Tumblin' Tots:** A complete game written in Assembly language. Save the falling babies in this game. Author: David Ashley

**VGad:** A gadget editor that allows you to easily create gadget. The program then generates C code that you can use in your own programs. Author: Stephen Vermeulen

**MenuEd:** A menu editor that allows you to easily create menus. The program then generates C code that you can use in your own programs. Author: David Pehrson

**Bspread:** A powerful spread sheet program written in AmigaBASIC. Author: Bryan Catley

2

## AC V4.3 and V4.4

**Fractals Part I:** An introduction to the basics of fractals with examples in AmigaBASIC, True BASIC, and C. Author: Paul Castonguay

**Shared Libraries:** C source and executable code that shows the use of shared libraries. Author: John Baez

**MultiSort:** Sorting and intertask communication in Modula-2. Author: Steve Faiwieszewski

**Double Playfield:** Shows how to use dual playfields in AmigaBASIC. Author: Robert D'Asto

**'881 Math Part I:** Programming the 68881 math coprocessor chip in C. Author: Read Predmore

**Args:** Passing arguments to an AmigaBASIC program from the CLI. Author: Brian Zupke

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## AC V4.5 and V4.6

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tally across the screen from left to right. You can set the speed and duration as well as decide on what screen line your crawl should take place. The crawls and rolls are very smooth but closer

examination reveals a touch of jitter, especially at faster speeds. Also with no word wrap, creating the text crawls can be a little tricky; pay attention to spacing at the conclusion of lines.

A Teletype command makes each character appear one at a time to simulate the words being typed across the screen. Impressive results can be achieved by experimentation with the speed control. The Skip command will jump over a certain page you do not want in your particular presentation. A total of 14 different effects are included, which range from checkerboard wipes to expanding from center to opening doors. These only wipe from the background (or live video) to the text/graphics and are not page-to-page transitions.

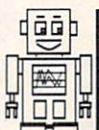
The manual, which is excellent, concludes with a few pages of keyboard shortcuts, pages of tips for video production (from lighting to editing), troubleshooting tips with complete detailed solutions, and a video glos-

sary that combines video and computer terms. The writers really seem to care about the user getting on the right track with video producing, which can only enhance the final output when mixed with AlterImage text and graphics.

### CONCLUSIONS

Although there is an ESC command, it is not activated until the current screen is done with its transition or action. This can be time-consuming if you have an entire page of text crawling. You must wait for it to play out before you are returned to the main panel. It certainly would be nice to use regular Amiga fonts from within AlterImage Video F/X. The 200-pixel (lines) limit on imported graphics has to go. Even if you save a page created with the program, you cannot re-load it because it's 400 lines! This also prevents using a stock supply of 640 x 400 background pictures in your presentations. However, pages can be loaded if they are contained in a script.

Aside from the drawbacks mentioned, this is still one charming program. It's fast and so easy to use that it's ideal for anyone in a hurry to create some text messages with basic graphics. The mouse, usually running on idle during programs of this nature, is fully



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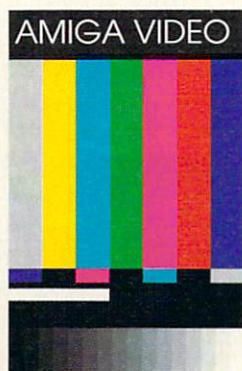
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# UNDERSTANDING GENLOCKS

by Matt Drabick

IT SEEMS AS THOUGH someone is advertising a new genlock for the Amiga every other month. With so many different genlocks available, it can be very difficult trying to decide which one to buy. Perhaps the first thing to be sure of is what a genlock actually does. A genlock synchronizes the Amiga's encoded RGB output with an incoming video signal supplied by a camera, VCR, or other video source and then sends out a signal that is a combination of both the Amiga's output and the original video input.



This chart compares the features of some of the major genlocks on the market today.

A genlock is also an encoder because it uses the separate RGB output of the Amiga and creates an NTSC composite, Y/C, or other video signals.

It is important to understand that an Amiga cannot generate a color video signal and must use an encoder or genlock to produce one. It is also important to understand the difference between an encoder and a genlock. An encoder only combines the separate RGB signals into a video signal. It cannot synchronize with an incoming video signal. An example of such an encoder is DCTV from Digital Creations. DCTV provides a high quality video output but has no genlocking capability of its own. This is suitable for feeding a signal to a VCR to be recorded and then played back from

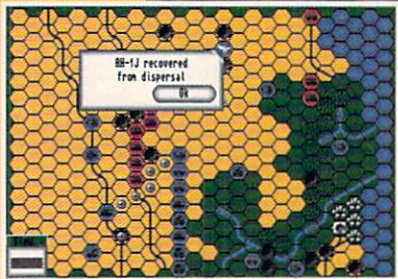


	Y/C Video	Transcoding	Component	Dissolves and Fades	System Timing	Works With All Amigas
Amigen	No	No	No	No	No	Yes
MiniGEN	No	No	No	No	No	Yes
ProGEN	No	No	No	No	No	Yes
2300	No	No	No	No	No	2000 Series
RG300C	No	No	No	Yes	No	Yes
SuperGen	No	No	No	Yes	Yes	Yes
Studio A	Yes	Yes	No	Yes	No	Yes
ScanLock	Yes	No	No	Yes	No	Yes
VideoMaster	Yes	Yes	No	Yes	No	Yes
2000S	Yes	Yes	No	Yes	Yes	2000 Series
4004/4004S	No/Yes <sup>(1)</sup>	No	No	Yes	No	2000 Series
701	Yes <sup>(1)</sup>	No	No	Yes	Yes	Yes
711	Yes	Yes	No	Yes	Yes	Yes
721	Yes	Yes	Yes	Yes	Yes	Yes
VideoBlender	No	No	No	Yes	No	Yes

(1) is Y/C out only



Paraphrased from: General H. Norman "The Bear" Schwarzkopf.



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videotape. A genlock not only encodes the RGB signals into one signal, but also synchronizes the encoded signal with another video signal from a camera or VCR for titles or full-screen displays while editing.

All of the genlocks available for the Amiga work with NTSC (color) composite video, an industry standard which has been in existence since the early 1950's. The color composite video signal is a compromise, allowing for the addition of color in what was originally a means of transmitting a black and white television signal. Because of the bandwidth limitations for the color, or chrominance, portion of the video signal, as well as crosstalk and other limiting factors, what first started out as an RGB image created with your Amiga will not look as good when encoded into composite video.

Since composite video is the industry standard, many genlocks only encode a composite video signal. However, over the last ten years or so, component video has become a reality. Component video is much closer to being a pure RGB signal because it records a separate track for the luminance, or black and white portion of the video signal, and two color-difference signals. While component video is not RGB, it has more color bandwidth and eliminates many of the limitations of composite video. Strictly speaking, component video is known as YIQ, or Y, R-Y, B-Y, or perhaps more recently as Y, Pb, Pr, where Y is the luminance signal and the other values stand for the two color-difference signals that provide the chrominance information.

Falling somewhere in between composite video and component video is Y/C (Super VHS and Hi-8) video. Often thought to be component video, Y/C is really composite video taken a step further. Separate luminance and chrominance information prevents crosstalk and other picture degradation. An additional bandwidth for the

luminance delivers a sharper picture. And, it's not as expensive as the component video formats MII and Betacam. While all Amiga genlocks will work with composite video, and some others will work with Y/C, only one Amiga genlock works with component video.

A feature to look for in a genlock is the ability to transcode between composite and Y/C formats. If you feed a Y/C signal to a genlock and it can simultaneously send out a composite and Y/C signal, or if you feed the genlock a composite signal and it can simultaneously send out a composite or Y/C signal, then that genlock is said to be capable of transcoding between the two video formats. Not all genlocks which work with composite and Y/C video are capable of transcoding. This is an important feature to look for in genlocks that claim to work with both formats.

Some of the genlocks available for the Amiga have dissolve and/or fader controls that allow for the keying and/or mixing of the incoming video signal and the encoded Amiga graphics. The ability to key or display someone's name as he or she is seen speaking on the screen is a basic video technique. Dissolving means the gradual disappearance of the background video as the Amiga image becomes more and more visible (or vice versa). Look for these options when comparing genlocks.

Another useful feature to look for is system timing, or the ability for the genlock to be timed to an external reference signal (such as blackburst) for use with a video production switcher. More advanced genlocks have external (or other easily accessible) sync and subcarrier phase controls that allow for the correct timing of the Amiga's output with a production switcher. This is probably most appreciated in a television studio or post-production house.

Perhaps the most important is the quality of the encoding process that converts the Amiga's RGB signal into composite, Y/C, or component video. Just how accurate the color is, and how much noise and smearing there is, as well as how sharp the picture is, is a critical aspect of the genlock's performance. After all, what is the point of selecting specific colors for a graphic if the genlock isn't capable of accurately reproducing the colors?

The price range for genlocks varies greatly, from around \$200 (list price) up to several thousand dollars. Without attempting to include all the genlocks that are available for the Amiga, the following is an overview of genlocks for the Amiga and a brief summary of each.

Representing the low end of the cost scale are the Mimetics Amigen, the MiniGEN and ProGEN from Progressive Peripherals and Software, the Commodore 2300, and the Rocgen RG300C. These genlocks work only with composite video and do not have many additional features. Although, dissolves and fades are advertised for the Rocgen RG300C, these genlocks, while acceptable for consumer or low-end video production use, are not suitable for broadcast purposes or expensive video production work. They are, however, very affordable. I have successfully produced many videotapes with a ProGEN but often wished it had dissolve sliders and sharper resolution.

The middle ground is represented by the SuperGen from Digital Creations, the Scanlock and VideoMaster from VidTech, and the Studio A from Spirit Technology. All of these genlocks have fader and dissolve controls, as well as other advanced features. And while they don't represent the ultimate in Amiga genlocks, they are certainly a big improvement over the low end.



The SuperGen from Digital Creations has been available for some time, and while it may no longer be the state of the art, it is still a good value, with reasonably accurate encoding and good detail. The two slide pots allow for dissolves between the encoded Amiga output and the incoming video signal, as well as fading to black. The SuperGen can be timed to a video switcher via an optional sync generator.

The ScanLock and VideoMaster, both from VidTech, offer true Y/C in and out compatibility. The Scanlock, however, does not transcode between composite and Y/C video. If you feed it a composite input, you can only output a composite video. If you feed it a Y/C signal, you can only output a Y/C signal. While this may seem trivial, it can be important if you are trying to integrate your Amiga into an editing suite that has both composite and Y/C equipment. At a higher price, the VideoMaster improves upon this by offering transcoding between composite and Y/C. While both genlocks have two independent fader controls for the Amiga video and incoming signal, the VideoMaster again improves upon the situation by offering some simple wipe patterns, as well as an RGB splitter that allows for the connection of a Digi-View digitizer. Unfortunately, neither genlock has external sync and subcarrier trim pots for timing with a video switcher.

And finally, for the middle range, is the Studio A from Spirit Technology. The Studio A offers a modular approach in genlocks, starting with the base unit that offers fade to black, source video or Amiga graphics, keying and dissolving between source video and Amiga graphics, and internal timing controls for phasing to a video switcher. In addition to the base unit, an RGB module for digitizing and displaying is offered, as well as a Y/C module that allows for Y/C input and output and transcoding between composite and Y/

C video. The modular approach allows those of us with limited budgets or needs to buy exactly what we need in an Amiga genlock. This is a very nice feature.

Finally, the high end is well represented by the SuperGen 2000S from Digital Creations, the Magni 4004 series, and the Omicron OMNI-GEN 701, 711 and 721 family of genlocks. All of these are broadcast-quality units, with highly accurate encoding and extremely stable output, and are suitable for use in a television studio or post-production house environment.

The SuperGen 2000S is a state of the art genlock, with full transcoding between composite and Y/C video, software based controls that allow for system timing with a video switcher, complete dissolve and fade capabilities, and highly accurate encoding. For the money, this is a very good genlock.

The Magni 4004 and 4004S is made by a company known for broadcast-quality television test equipment, so it shouldn't be too surprising that they offer a broadcast-quality genlock. The Magni is also a good value with essentially the same features as the SuperGen 2000S, except the ability to input a Y/C video signal (thus no transcoding capability) and no system timing. The 4004S model does have Y/C output, but the source signal must still be composite video with its limited resolution and color artifacts. If working in Y/C is not an issue, and you need a broadcast-quality unit, definitely consider buying this product.

The OMNI-GEN 701, 711 and 721 family of genlocks all share the same basic capabilities (broadcast-quality encoding, dissolve and fade capabilities, sync and subcarrier system timing controls) and then progressively offer multi-format capability with a corresponding increase in price. The 701 allows only a composite video input, but does have a separate Y/C output. The 711 works with both composite and Y/

C video (with transcoding). The 721 does even better by offering composite and Y/C transcoding and then adding component, RGB and Y/C 688 (the dub output from U-Matic VCR's) video; and it transcodes and outputs all of these different formats, regardless of the input video signal. The 721 is probably the ultimate in an Amiga genlock, offering just about anything and everything that you would want to have in a high end studio environment, and it has the price tag to prove it as well.

And finally, the VideoToaster from NewTek and the VideoBlender from Progressive Peripherals and Software, are capable of doing a lot more than encoding and timing your Amiga graphics with a source video signal. Both are composite video devices only. While the Toaster is extremely limited as a genlock, the VideoBlender allows for keying, dissolves and wipes and has a blackburst output.

If you own an Amiga 500 with the factory-shipped power supply, be sure that your genlock comes with its own power supply. If the power supply is optional, buy it. The genlock may put a load on the Amiga's power supply and cause some unwanted problems. Most of these genlocks will work with an Amiga 3000, but may require some internal adjustments or modifications to work properly.

I hope the above information will be of some use when trying to determine which genlock to buy for your Amiga. Price is definitely a consideration, but so is the quality of the encoded graphics, the ability to do fades and dissolves, as well as work with Y/C video.

•AC•

*Please write to Matt Drabick c/o  
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# Sonar Ranging System

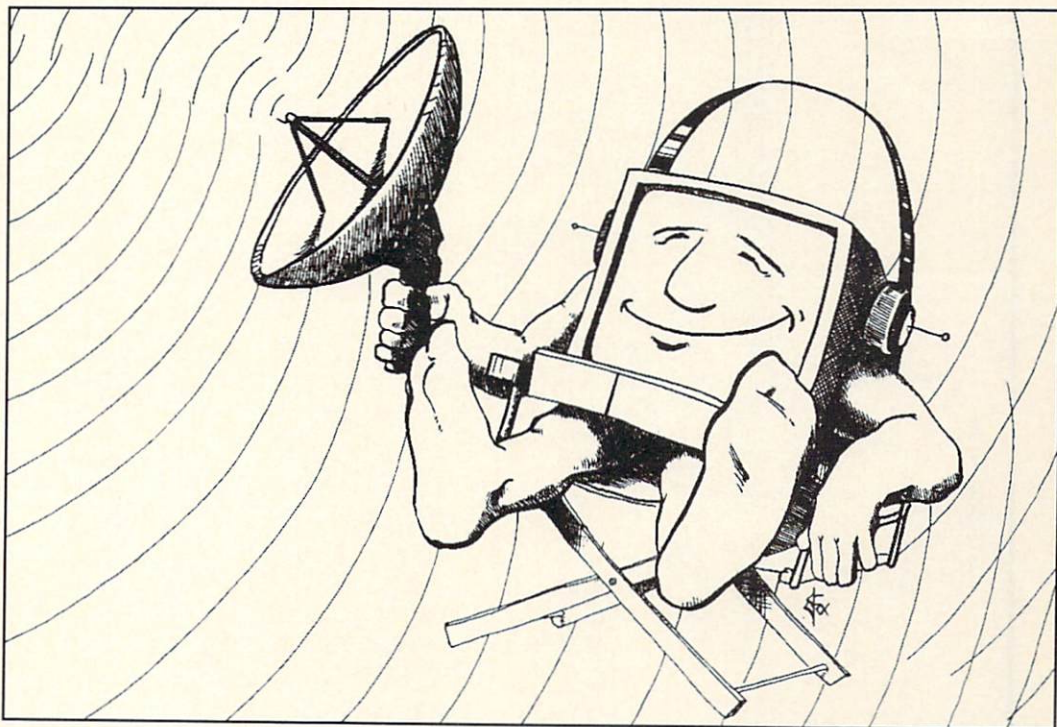
by John Iovine

## Part III—Using the ranging module

This time, we will combine the last two hardware projects to make a simple sonar system for the Amiga. The information regarding the stepper motor operation and Polaroid module will not be repeated. If needed, please refer to the previous articles in December 1990 and March 1991.

In this project, we continue to use the Polaroid ranging module in the single target mode. This gives two advantages: it keeps the ML portion of the program small, and since the ML section is identical to the previous article using the Polaroid module, you can append that section of the program into the new one and alleviate typing the numbers of the ML code in again. If you built that project, the program and the circuit have already functioned properly. This will save time if it becomes necessary to troubleshoot.

By incorporating the ML portion of the old program into this program, we are automatically restricted to the single target mode. This hints at how the sonar system can be improved. In using the multi-target mode, it is possible





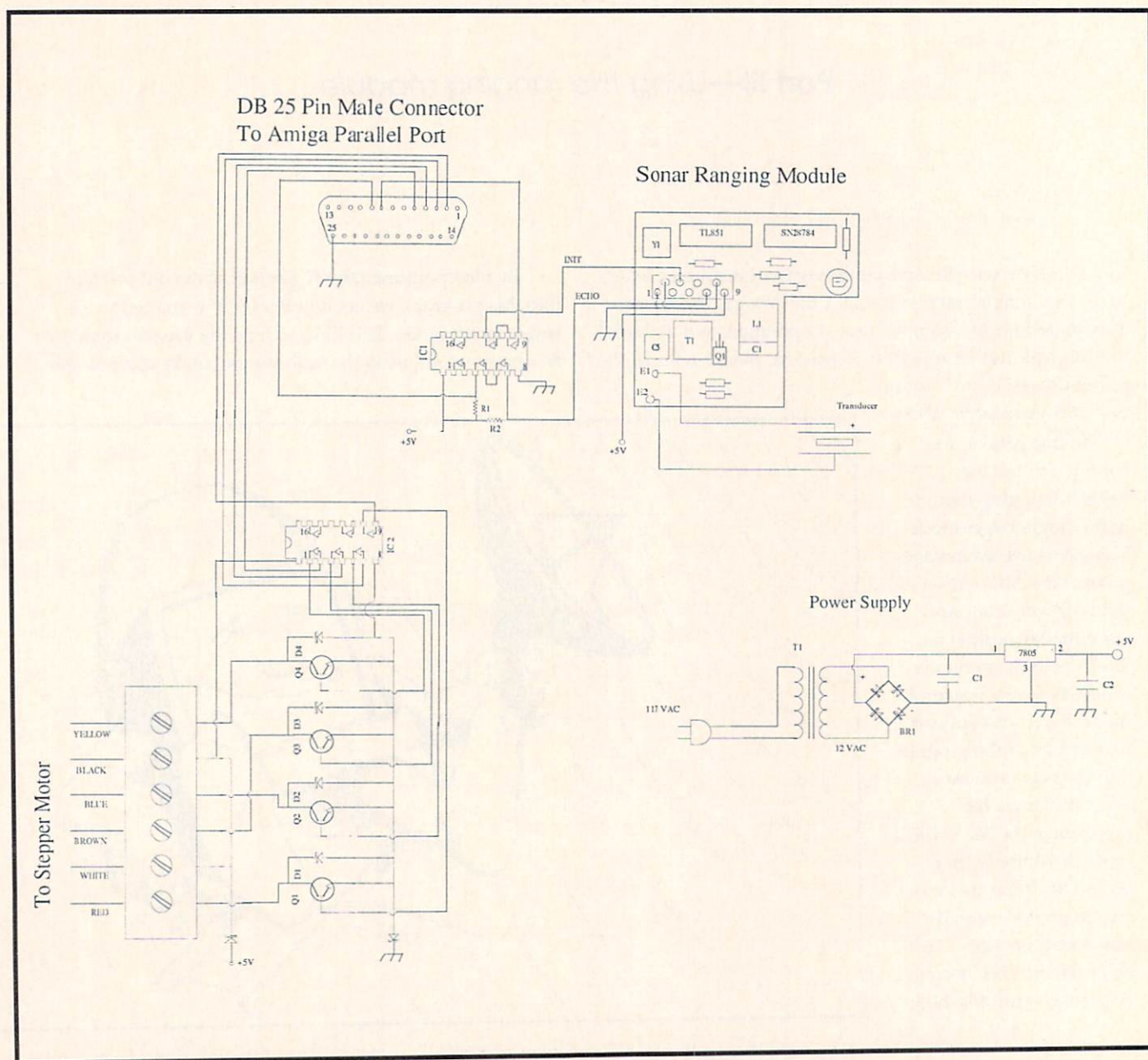
to see beyond the first target, provided the targets are a foot or so apart. Although this program does not utilize multi-target mode, allow me to explain what this is, in case you want to modify and improve the program circuit yourself.

In the single target mode, once the echo is received, the receiver section of the module turns off. In the multi-target mode, the receiver section is switched back on to receive additional echoes that would be equated to targets behind the first target.

The schematic shows the complete circuit. You can simplify the circuit complexity by visualizing the module

portions from the last two articles. In the previous article on stepper motors, the power supply was +24 volts. The power supply for this circuit is 5 volts. This still provides adequate power for the stepper motor.

You may choose to house the entire project in a case. I simply mounted the transducer to the shaft of the motor with epoxy glue. I first used an instant glue to quickly mount the transducer and hold it in place. After this dried, I applied the epoxy glue for more strength and permanence. To insure smooth operation and prevent strain against the stepper motor movement, the wires leading from the circuit to the transducer should be of a thin gauge.





## PARTS

IM-Step 3.75 Stepper Motor 6 wire	\$10.00
Polaroid Sonar Ranging Module	\$55.00
Polaroid Transducer	\$20.00

Postage & Handling	\$ 2.50
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Available from:  
Images Company  
P.O. Box 313  
Jamaica NY 11419  
min order \$10.00  
NY State residents add 8.25 sales tax

### Power Supply

Bridge Rectifier	PN# 276-1146
Transformer 120/12V	PN# 273-1352
(2) Capacitors 35V 1000uf	PN# 272-1019
Voltage Regulator 7805	PN# 276-1770
line cord	PN# 278-1255
misc. switch, case	

### Parts List

IC1 & IC2 4049 Inverting Hex Buff	PN# 276-2449
R1 & R2 3.9 K resistor	PN# 271-029
DB 25 Pin Male Connector	PN# 276-1547
D1-D4 1N914 Diode (50/pak)	PN# 276-1620
PC Board Terminals Stackable	PN# 276-1388
16 Pin Socket for 4049	PN# 276-1998
S1-S4 Momentary push switch (4/pak)	PN# 275-1547c
Q1-Q4 NPN transistors (15/pak)	PN# 276-1617
PC Board	PN# 276-170

All parts with a PN# are available from Radio Shack

The basic program provides the graphics and the moving recycling sweep through a 180 degree arc, mimicking a standard radar screen. The mounted transducer moves simultaneously with the graphic sweep on the screen. As each step in the sweep is taken, the program calls the ML routine to range a target that is drawn on the screen as a small circle.

Again, I didn't spend too much time with the graphics. You can color and modify the graphics to your liking. I am more interested in providing you with a minimal, but completely functional, program. This way it is easier to derive the functioning of the program and make subsequent modifications and additions.

When you run the program, an arm will sweep back and forth through a half circle, plotting the distances as it goes along. It looks very much like a typical radar screen. The ML portion of this program is the same as the one used in the ranging module.

For those of you who might attempt to build this project from this article alone, let me advise you to pick up the two previous articles and take a modular approach to building. By doing so, it becomes easier to debug either circuit or the program. After getting both modules to work, it's easy to combine them to finish the project.

### GOING FURTHER

With a little ingenuity, you can add some intelligence to the basic program to create other projects. It's possible to create a sonar alarm system once you have the computer map and the contours of a room stored. Any deviations in the contour, as would happen when someone entered, could trigger an alarm. Once this is accomplished, the computer could lock on and track any object that moves through its ranging field. In addition, by comparing the distance the object moved and time between scans, the computer could calculate the speed and direction of the object.

Another avenue of research is the use of the sonar system as a rudimentary navigation system for a mobile robot.

•AC•

Please write to John Iovine c/o Amazing Computing, P.O. Box 869, Fall River, MA 02722-0869.



# CHROMAKEY

## Live Video Over Amiga Graphics

by Frank McMahon

MICROSEARCH HAS CERTAINLY FILLED a need that has yet to be addressed professionally in the Amiga video arena, enabling the user to superimpose him or herself over any Amiga screen. Don't genlocks do this already? No. A typical Amiga genlock superimposes Amiga graphics over video, exactly the opposite. New Tek's Video Toaster comes close by allowing "luminance" keying, which can allow a camera or video feed to appear over Amiga graphics. Similar to a TV weatherperson, the person would stand in front of a white sheet and the graphic would appear "keyed" on the white sheet. However, luminance keying is based on the brightness of the sheet, so proper lighting is essential. Also if the lighting is too bright on the performer, either front lights or backlights on the hair for example, the graphic will key onto those areas as well, an undesirable condition to say the least. ChromaKey is based on the chroma or color of the sheet (using a sheet as an example only; it could be a painted wall, a structure on the set, etc.) meaning that a certain hue is used as a base for the keying. The color in professional circles is either green or blue. This solves the problem of lighting to some degree, and parts of the person should key out only if he or she is wearing that exact shade of color. This technology has been used for years in network broadcasts and now is available to Amiga users. Many of you have not had a great need to key yourself over weather maps, but as we'll find out, there are many other uses for this unique product.

ChromaKey will work on any Amiga from the 500 to the 1000 to the 3000. However, you do need to have an external genlock. This is unfortunate because it would certainly be nice to have an all-in-one unit without requiring extra hardware. I assume this was to keep the price to a minimum, and maybe MicroSearch was counting on your already having a genlock if you were doing video. You also need a video camera or some sort of composite color video source to run ChromaKey. No time-base correction is needed.

As I broke open the box, I saw a neatly organized foam divider that housed the ChromaKey unit, a power supply, ChromaKey interface cable, blue background fabric, two diskettes, and a VHS demo tape. It was a simple matter to pop in the VHS tape to see if it offered setting up directions. It didn't; rather it contained several demos of uses for the unit. I already had a pre-release version of this product a few

months before (hand cut ports, no labels, etc) and had received a video tape with it and can fondly remember that the tape was pretty poorly mastered, with grainy pictures and color bleeding. The tape is the same one as in the final release but, I'm thankful, it looks better. It basically goes over some very creative uses of how to utilize the hardware, including mixing some 3-D HAM animations with live video. One sequence rendered with a 3-D program has a guy "sitting" at a table. The chair keeps moving out from underneath him; another has a guy "flying" over a 3-D mountainscape—very neat stuff.

### FUZZ ON THE BORDER

However, I noticed on some of the video demos a certain amount of "fuzz" on the borders of the actors and actresses. Some sections would cut out hands or tops of heads during the keying. Realizing that any type of keying was hard to control on occasions, I began to set up the system. Using a SuperGen for the external genlock, I began by hooking up the ChromaKey interface cable. This is an RGB pass-through on one end which goes between the Amiga RGB video output and the external genlock RGB input cable. The other end of the interface cable plugs into the back of the ChromaKey unit. The power cord also plugs into the back of the unit. There are BNC connectors for video *in*, which come from your video camera/source, and video *out*, which goes to the video *in* connector on your genlock. There are two switches on top, one labeled Genlock/Chroma and the other, Normal/Invert. The Genlock/Chroma toggles between genlock mode, which completely bypasses the ChromaKey unit and allows regular genlock use, and chroma mode, which activates the keying according to the main Key level slider control. The color blue in the video signal is replaced by Amiga graphics. Normal and Invert toggles between normal chromakeying and inverting the picture, which causes everything that is not blue to become transparent, leaving just the blue in the video.

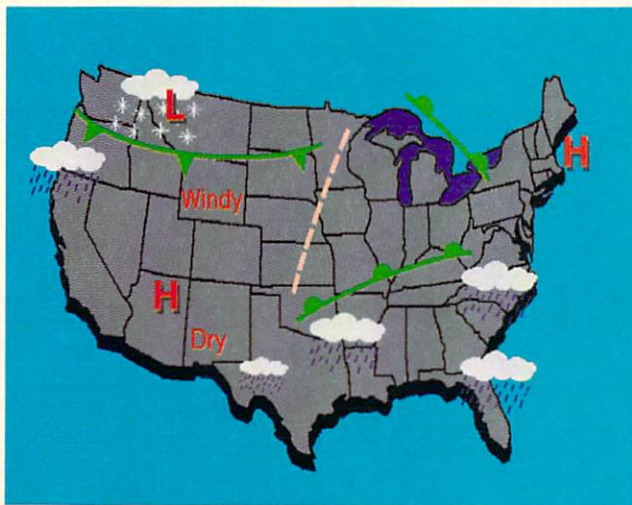
### HEEDING TIPS

The manual spends a couple of pages on proper lighting, very important in creating acceptable results. Tips on special effects include a mention of chroma-blue paint, which can be used to paint a backdrop instead of tacking up a blue sheet. MicroSearch gets straight A's in the technical area with



detailed instructions for setting several trim controls inside the unit. Many will pass over this "boring" section, but it reveals several features. For example, there is a separate jumper allowing you to change the key color from blue to red—meaning just red colors will key out. Also available is hue adjustment, which can fine-tune the shade to be keyed. Delay timing, phase alignment of incoming video, and video amplitude are also supported. Semi-detailed ChromaKey specs are listed along with several pages of trouble-shooting tips. The two disks included with the package contain several textures and scenic locations for keying over. The quality of all the pictures is excellent.

After hooking up the hardware, setting up a camera and lights, and tacking up the supplied blue sheet, I booted the Amiga. The unit was activated as soon as the Workbench screen appeared, and for a test I leaned over and stuck my hand in front of the camera. Sure enough, there was my hand keyed over the Workbench screen! Unfortunately, it looked somewhat grainy. With a slight adjustment of the lights and a small move of the key slider, the keying looked a lot better.

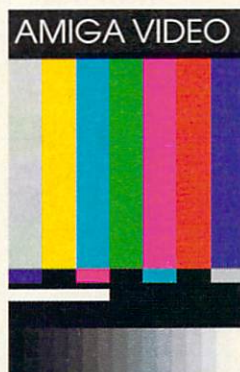


Professional-looking background screens for your live video. Stand in front of a weather map, or walk across a variety of other sets included ChromaKey

I tried keying different things over different backgrounds and ChromaKey performed without a hitch. Control of the unit's slider as well as light placement played a more significant part of creating satisfactory results than what I had anticipated.

## CONCLUSIONS

While the whole package is professionally designed, and the included software and demo tape are a big plus, my main reservation about this product concerns quality. It's not as good as it should be. Chroma key usually produces a solid border around the actor/actress, but this unit produces a jittery border that is noticeable during some keying sessions. After opening the unit, I could see that there really isn't much



hardware there. Maybe there needs to be a few boards dedicated to cleaning the keying process. I've come to these conclusions, though looking at it from a professional standpoint. It certainly wouldn't fly using it on-air at my studio. Earlier, I had compared it to the Video Toaster; well the Toaster's luminance keying is quite a bit better than this product's chromakeying. What I'd like to see is a future product called "ChromaKey Pro." I'd be first in line, willing to pay five times more for it because I think there is potential here to fulfill professional need.

Professional reservations aside, from a consumer viewpoint it is excellent! When I took this unit out of the studio and hooked it up at home I had a blast. The possibilities are endless. Have your kids act in outer space movies. Design sets with DeluxePaint! Mock newscasts. Produce very scenic home movies. Create special "flying" effects. Have fun with actors/actresses travelling "into" your graphics.

One trick on the demo tape is to film yourself painting on a white board using blue paint. The paint keys out revealing your graphic. Another idea that comes to mind is "splashing" blue paint on a white board to reveal your logo or picture underneath. The people on the demo tape are obviously having much fun, and the potential is very catchy. With a little imagination, the possibilities are numerous

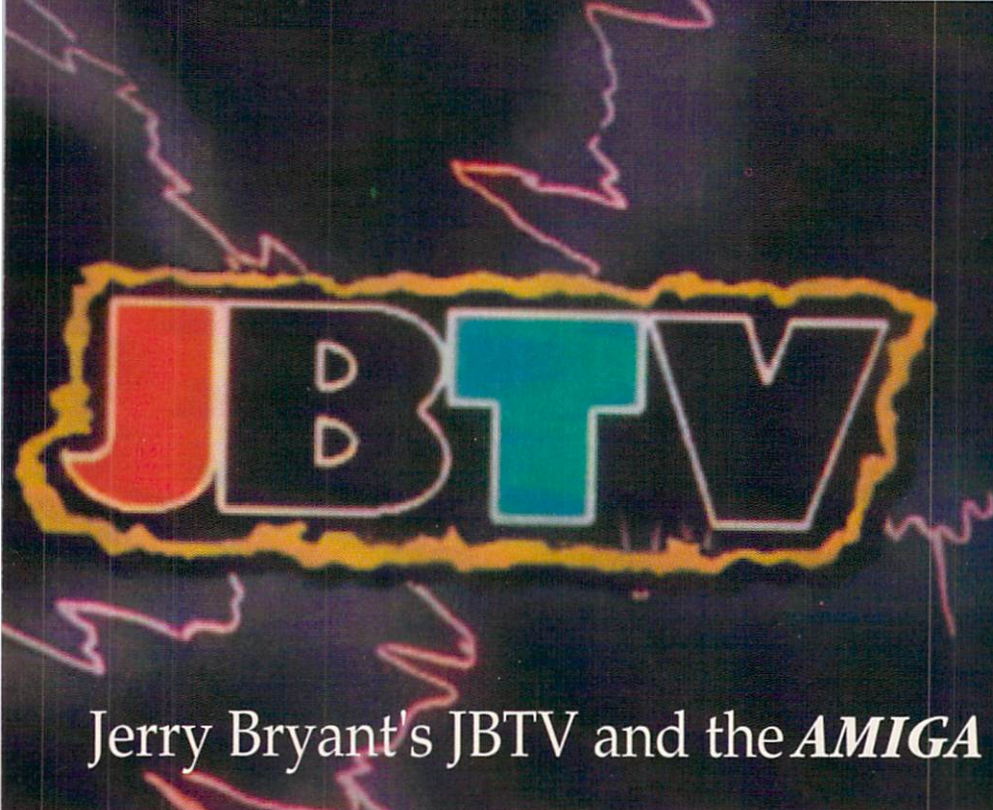
If you're heading a production studio and your clients want your on-screen talent to be keyed on a regular basis, expect to pay much more than ChromaKey's modest price to get "over the air" quality. However, if your production studio is down the hall from your bedroom and clients and your on-screen talent are mainly yourself, your friends, your kids, and on occasion your dog, then definitely check out MicroSearch's ChromaKey keyer. Your home videos will never be the same!

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ChromaKey  
Price: \$395.00  
MicroSearch, Inc.  
9896 Southwest Freeway  
Houston, TX 77074  
(713) 988-2818  
Inquiry #268







## Jerry Bryant's JBTv and the AMIGA

Jerry Bryant is an excited, energized, dynamic, video editor and producer who has just earned an hour of broadcast television time on WGBO-TV 66 Chicago on Saturday at 1:00 p.m. for his music video show. This is in addition to his continued work in providing three hours of music videos each week on Chicago's cable access network channel 19. Four hours of television is a tremendous workload. This is even more amazing since he does it from the living room of his apartment. Jerry's secret weapons are his Amiga and a Video Toaster.

It didn't start that way. "I had originally planned to use the Amiga in an off-line situation to look at my tapes," Jerry said in an interview with *Amazing Computing*. "I put together an entire show just as an experiment. It looked



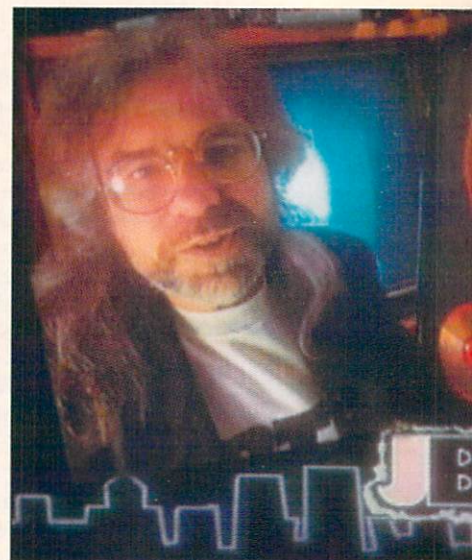
great; it sounded great. You could not notice a difference."

Facing a dwindling budget and a very large overhead, Jerry Bryant moved from a three-million-dollar production studio to his living room overnight—from a fully-furnished commercial studio to a view of Lake Michigan and an Amiga-centered facility. His current inventory of equipment is still far superior to the average video hobbyist's. Jerry's equipment includes a Beta Cam SP, a Beta Cam SP dockable deck, a Tascam audio console, vector scope and wave form monitors, 2 SP machines, 23/4 inch tape units, an Hitachi Z1 chip camera, and a JVC tube camera. Both cameras are genlocked to the Amiga.

"I use a time base corrector on the decks. It is a frame synchronizer plugged into the Toaster. The Beta Cam decks have built in TBC's so they are just genlocked through the system.

Jerry discussed the cost of doing business with the Amiga. "I never expected that I would be able to do it this way. The original budget for the cable access show was three times what it now costs to produce the show with the Amiga."

Does this mean that the show lacks force? Just look at the list of artists that Jerry has had on his show. Visiting



From JBTv's logo to on-air editing, Jerry Bryant overhauls and improves productivity while creating television each week from his Chicago apartment.

celebrities have included The Fixx, The Replacements, John Wesley Harding, The Judy Bats, Peter Hook with Revenge, Betty Boo, They Eat Their Own, The Vixens, Crunchomatic, Too Much Joy, INXS, Bullet Boys, Fishbone, and many more. "Whenever an artist comes in town, the record company tries to get them on the show."

Jerry confesses that part of his success in attracting the big names in alternative music is the two different shows. While the hour on Channel 66 every Saturday carries a remarkable mix of unique bands, the three hours on cable access allow Jerry to play the more radical music of today.

Speaking of his work in cable access, "There are a lot of videos that you just cannot show on broadcast TV. There are a lot of artists that don't have the mass appeal. When you are on broadcast television, you have to look at ratings all the time." Jerry countered by saying, "But it is valid, good music, like heavy metal music. A lot of it does not get played on the radio, but Access gives you an outlet to play things that are alternative and a little left of center."

Jerry Bryant's major source of income and claim to fame was SuperSpots, which produces television commercials for radio stations across





uses the Amiga to cut  
ing four hours of  
nt.



the country. Just a few of these clients have been WNEW in New York, KLOS in Los Angeles, Live 105 in San Francisco, KSON in San Diego, WGAR and WMMS in Cleveland, as well as KLSI in Kansas City.

Although Jerry will be using other equipment and 35mm film to create TV spots, he will also use the Amiga. "With DeluxePaint, we can do the logos. We can do tests for the radio stations and show them different types of logos. We can lay it on 3/4-inch media and send it to the stations on 1/2-inch tape so they can have an idea of what their logos will look like."

Post Pro Film and Video, the company that JBTV uses to do its post-production work on these large accounts, has also purchased an Amiga 2000 with a video toaster to complement the JBTV system. Now JBTV only needs to drop off its disks and Post Pro can recreate its work on-line

As account executive, Michelle Gundic bears the major responsibility of working with clients and maintaining an image for JBTV. Does she worry about bringing a client into JBTV's apartment studio? "If they want to come by and see the facility, we are more than happy to have them stop by. Most of my radio accounts are done over the phone and I travel to see them. We have

a reputation in that area. They feel very comfortable in continuing to do business with us."

Chris Carter is the JBTV graphics department. His comments on the Amiga were very positive. "I am a typical Mac fanatic, but when it comes to doing what the Amiga is doing, there is no other thing like it. It is really incredible." Speaking of his experiences with a high-end Aurora system, Chris stated, "I find myself using the same techniques on the Amiga that I had used on the Aurora system."

"There is still a lot I have to learn on it. I haven't figured everything out yet. There are some things it will do faster than the \$200,000 Aurora system and there are some things it will not do faster. It is a trade off." Chris said, "It is as though Amiga has made everyone say, 'Hey look, you guys with these big expensive machines, you better get

rolling.' Here's a little Amiga for \$8,000 and it is doing these things that that big one couldn't do as fast."

With only a couple of months of Amiga work behind the show, JBTV is still discovering the tools available. Jerry is excited about purchasing an Ami Link editor as the next addition to the system.

Jerry's independent style and innovative approach to the video medium seems a perfect match for the Amiga's flexibility. Whatever the outcome, it is clear that JBTV has changed the way Chicago residents view music videos and the Amiga has changed the way television is done everywhere.

**JBTV**  
10 East Ontario  
Chicago, IL 60611  
(312) 943-2399

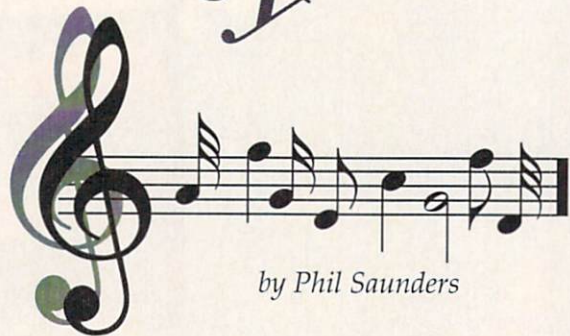
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**Jerry's personal  
dedication  
keeps JBTV  
in touch  
with the  
alternative  
music  
community.**





# Medley



by Phil Saunders

OVER THE NEXT SEVERAL MONTHS, we'll take a look at some specific products for composing music with the Amiga. This month, I'll review Dr. T's Music Software's Phantom, a SMPTE synchronizer MIDI interface. In the next two months, I'll provide an in-depth review of the two premiere sequencers for the Amiga—Blue Ribbon SoundWorks' Bars&Pipes Professional and Dr. T's Keyboard Controlled Sequencer (KCS) 3.5 and Level II. I'll look at the strengths and weaknesses of each and finish with a chart comparing them feature by feature. Both are compatible with the Phantom.

**Dr. T's Phantom is a good value, combining a MIDI and SMPTE interface at a low cost.**

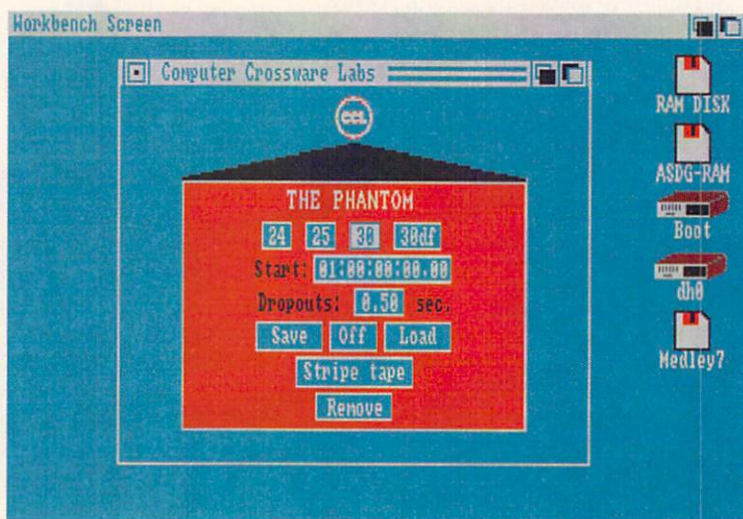
The Phantom is a combination MIDI interface and SMPTE synchronizer designed by Computer Crossware Labs and marketed by Dr. T's Music Software. It plugs into the serial port of an Amiga 500, 2000, 2500, or 3000 and provides a pass-through for the serial port. The Phantom can also be used

with the Amiga 1000 with an appropriate adapter cable (see chart). The Phantom's hardware and software are designed to add SMPTE synchronization to Dr. T's KCS and compatible software and also to provide an Amiga MIDI interface that will work with any Amiga MIDI software.

Physically, the Phantom is a small black metal box that attaches to the Amiga via an 18" cable. The cable is rather short considering that you must be able to reach the Phantom to switch between it and whatever device is hooked to its serial pass-through port. The Phantom has one MIDI in and two MIDI out jacks, as well as audio in and out jacks that can be connected to a tape recorder. Power is drawn from the Amiga's serial port. The serial pass-through is controlled by a switch on the top of the Phantom. An LED lights up when the pass-through feature is activated; a separate LED lights up when the Phantom is synching to a SMPTE signal.

The Phantom is controlled by software that can run independently or as part of KCS. To use the Phantom, you must first install Phantom.library in the LIBS: directory of your Workbench disk or hard drive. A Workbench utility is included to perform this task for non-CLI users. There are two aspects to using the software: striping the tape recorder with SMPTE and synching the tape recorder to a previously recorded SMPTE track. Striping can be performed using the stand-alone Phantom program or from KCS. The program brings up a screen which asks you to select the frame rate of the SMPTE signal; 24, 25 and 30 frames per second, and 30 drop frame rates are all supported.

Once you've selected the frame rate and started your tape recorder rolling, hit the "Stripe Tape" box to record SMPTE time code on your recorder. The default start time is one hour, the general studio standard. The Phantom will automatically provide five seconds of lead-in to allow the tape





## USING THE PHANTOM ON AN AMIGA 1000

The Amiga 1000 uses a different serial port configuration than other Amiga models. The Phantom will work on the 1000 if you connect it with a proper adapter cable. The adapter must correct the gender of the Phantom's cable and also route the power pins correctly. *Warning: Do not try to connect the Phantom to the Amiga 1000 using a plain gender bender! It won't work, and there is a good chance you will destroy the Amiga, the Phantom, or both.*

You can obtain the parts needed to make an adapter cable at your local Radio Shack. The pin changes are derived from Dr. T's technical support and information in the *Amiga Hardware Reference Manual*. In particular, wiring the Phantom's -12V to the Amiga 1000's -5V was approved by Dr. T's and does work. If you do build an adapter cable, be sure to label which end goes into the Amiga and which end connects to the Phantom; they are *not* interchangeable. Neither this author, Dr. T's, nor *Amazing Computing* can be responsible for any damage to your computer or the Phantom as a result of this modification.

Despite the disclaimer, I have built such an adapter cable and gotten the Phantom to work on the

PHANTOM PIN	AMIGA 1000 PIN	SIGNAL
1	1	Ground
2	2	Transmit Data
3	3	Receive Data
4	4	Request to Send
5	5	Clear to send
6	6	Data set ready
7	7	Ground
8	8	Carrier Detect
9	23	+12 volts
10	14	-12 volts (connects to 1000's -5 volts)
11	15	Audo
12		No connect
13		No connect
14		No connect
15		No connect
16		No connect
17		No connect
18	16	Audi
19		No connect
20	20	Data term ready
21		No connect
22		No connect
23		No connect
24		No connect
25		No connect

Amiga 1000. One other warning: the adapter changes the signals that are present at the Phantom's serial port pass-through. You should not try to connect any device that depends on the Amiga's serial port pins for power to the Phantom pass-

through. You can use a cable that only passes pins 1-8 and 20 to connect a modem via the pass-through. I'm currently using this configuration, and it works well.

—PS

recorder to get up to speed. When recording SMPTE, Amiga multitasking is disabled in order to provided maximum accuracy. Moving the mouse or touching a key will interrupt the process. This dependence on the Amiga for control is a consequence of the Phantom's design, which substitutes computer power for intelligence built into the Phantom. On the whole this is a good trade-off, as it results in a lower priced product.

Once the SMPTE time code has been recorded, you can synchronize KCS to the time code. Be sure the

Phantom.library is in the LIBS: directory of your KCS boot disk. You will also need to set Phantom! under the environments option in KCS and to turn the TRACK mode loop option off. Once KCS is set up properly, you can control sequencer playback from the tape recorder's controls. If you press play on the tape recorder, KCS will automatically start your sequence in the proper place once the time code starts, even if you are in the middle of the tape. You can then record additional tape tracks on the tape recorder or additional sequence tracks into KCS.

I've heard one or two complaints about how much processing power KCS and Phantom use when synchronizing to tape. This is a consequence of the design, which relies upon software to decode the sync signal. In any case, if you are doing serious recording, you should probably not be multitasking, as the demands may overtax the Amiga's processor and affect the accuracy of your recordings.

There isn't much to say about Phantom SMPTE's performance. It worked flawlessly with my Fostex X-15 four-track cassette deck. The only



problem I had was with the SMPTE signal leaking onto the next track of the recording, which is caused by my tape recorder's poor crosstalk separation. It is very nice to be able to record new tracks into the sequencer while playing back audio tape. The Phantom is capable of "freewheeling" to cover up an occasional tape dropout. It can interpolate missing frames for up to 10 seconds (user-selectable).

My chief concern is compatibility. The Phantom works very well with KCS. The recently released Bars&Pipes Professional also incorporates support for the Phantom. But other Amiga sequencers, like MasterTracks Pro, Music-X, and the original Bars&Pipes do not support the Phantom and rely on MIDI Time Code (MTC) to synchronize with SMPTE signals. The Phantom does not support MTC. If you wanted to synchronize one of these other sequencers with a tape recorded with KCS and the Phantom, you would need

to use an additional SMPTE-to-MTC converter. Since many Amiga musicians use more than one sequencer, lack of MTC support is a significant liability. Dr. T's didn't design the Phantom to support MTC for a few reasons. Since there's only one MIDI input, the Amiga cannot sync and play (or record) at the same time. The MTC spec was not meant to be merged with regular MIDI data. Remember, the Phantom was designed to be cost affordable.

Despite MTC, the Phantom does what is designed to do: synchronize KCS to video or audio tape using SMPTE. If your primary need is to synchronize KCS with SMPTE, the Phantom is the best way to go. Compatibility with Bars&Pipes Professional is a nice bonus. If you don't own a MIDI interface and plan to use KCS extensively, the Phantom is a good value, combining a MIDI and SMPTE interface at a low cost. If you already have a MIDI interface or use a wide variety of

Amiga sequencers, you might want to compare the Phantom with stand-alone synchronizers made by MIDIman and J.L. Cooper. These boxes usually support SMPTE, FSK synching, and MIDI Time Code. Some can also convert SMPTE to MIDI sync, providing an alternate way to synchronize KCS with SMPTE (though this technique is considerably more awkward than the Phantom's approach). Despite concerns of its incompatibility with other sequencers, I'm quite pleased with the Phantom.

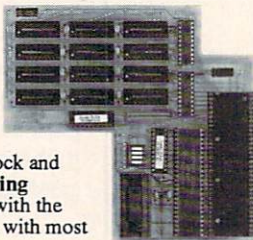
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The Phantom  
Price: \$299.00  
Inquiry #244  
Dr. T's Music Software, Inc.  
100 Crescent Road  
Needham, MA 02194  
(617) 455-1454

Please write to Phil Saunders c/o Amazing Computing, P.O. Box 869, Fall River, MA 02722-0869.

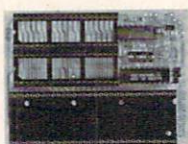
## Insider II™ 1.5 Meg in the A1000

From the maker of the first internal Ram board for the Amiga 1000, the original Insider™ by DKB Software. Allows A1000 owners to add up to 1.5 Meg of Fast Ram internally. User expandable in 512K increments using 256K x 4 Drams. Includes battery backed clock calendar. Comes with software for the clock and testing ram. Simple installation, no soldering required. The Insider II™ is compatible with the KwikStart™ Rom board. Also compatible with most processor accelerators. Retail Price \$ 249.95 w/ØK



## New KwikStart II™ V1.3 and V2.0

Allows A1000 owners to install V1.3 and V2.0 Kickstart™ Roms and switch between them. Upgrade to the latest operating system and still be compatible with software that requires Kickstart™ V1.3. Retail Price \$ 99.95 w/o Roms



## MultiStart II™ A500 & A2000

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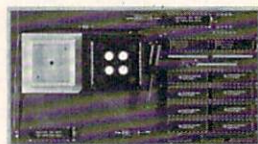
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# Super 8 Meets Amiga

by Patrik Beck

Like many who have bought an Amiga for video purposes, I dreamed of eventually recovering my investment by selling my services as a computer graphics artist. Like most who share that dream, I have discovered that breaking into the field of computer graphics is tough.

I have found an interesting niche in the video production field that is both profitable and has opened a few doors for my video graphics services. I now do film-to-video transfers enhanced with graphics. This article intends to give you enough information to transfer movie film to video with the addition of Amiga graphics, whether it's to supplement your business or to save money by doing it yourself.

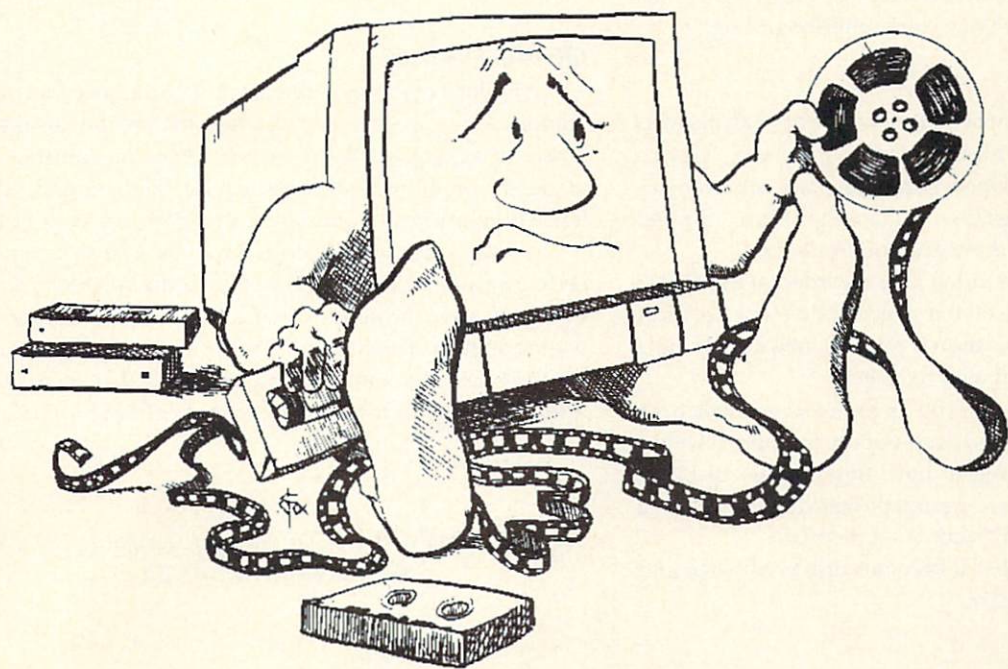
## THE BEGINNING

Find yourself a movie projector. They live in closets, basements and attics. If you can't acquire one from a relative

or find one at a rummage sale, try posting a note at a supermarket, laundromat, or BBS. Anywhere from \$10 to \$30 is a typical price. Be sure to check whether the projector is for 8mm or Super 8, as the format is not interchangeable. Some projectors have the ability to run both types of film.

## SETTING UP

Clean the projector thoroughly before use, taking special notice of the lens and the area through which the frame of film gets projected. Check the bulb. Each bulb has a three-digit code on the top for identification. Try to locate a replacement, as the old bulb's elements are probably brittle from age and disuse. (It took me several days to find the one I needed and it cost nearly \$30, more than I paid for the entire projector!) Keep the original bulb for comparison with the replacement.





For a projection surface, there are two options: a flat white surface or a rear projection device. The preferred method is a rear-screen projection unit (see Figure 2). The projector is pointed into a mirror which reflects the movie on to a semi-transparent screen. These units are stocked by photo supply stores and mail order houses and are priced between \$50 to \$100. The other method is to project the image directly onto a flat, white, non-glossy surface. A large piece of white construction paper will work as a screen, as will cardboard or even a wall.

Train a color video camera on the movie image as it is being projected. A camcorder will work as long as it has a "video out" output. You will also need a genlock to overlay the Amiga graphics onto the video, a VCR to record, and a standard television set to adjust the resultant composite video.

There are no special requirements of the Amiga and the software, other than what your job calls for. Most of what I have been asked to add are such exciting things as dates, names of vacation spots, and the identity of people appearing in the film. Nearly any titling program would be adequate.

### **ROLL 'EM, LESTER**

In a partially darkened room, run the projector. Adjust the projector's lens for the sharpest image. Next, position and aim the video camera. Achieving the best results from a camcorder takes a bit of trial and error. If you are using a camcorder, switch it to manual focus and adjust. If the camera has an indoor and an outdoor setting, try recording with both functions to see which gives you the better results.

Next, route the video signal from the camera to your genlock. Take the composite signal from the genlock and send it to the VCR. You can then connect a television to the VCR so you can monitor your work while recording.

### **FINAL CHECK**

Before you start the final edit, be sure to have all the reels in proper sequence and all the graphics prepared. Have a "script" written to show where edits take place and graphics are inserted. Before you get to work, have the script confirmed by your client to reduce the chance of problems.

Use only high-grade video tape recorded at the fastest (SP mode) speed. Follow all the standard do's and don'ts of video graphics: keep saturation levels low, and avoid single pixel lines and colors that tend to bleed.

Constantly inspect what you've recorded and watch for fuzz build-up on the film and drop-outs on the tape. It would be extremely embarrassing to have five minutes of blank video in the middle of a two-hour tape instead of film reel 12 because you forgot to hit "record" on the VCR.

Handle film carefully. It becomes brittle with age and will scratch and crack easily.

### **TECHNICAL DIFFICULTIES**

Film has a slower frame rate than video. This may show up as an annoying flicker. There is little that can be done about it, though the problem is less noticeable when using the rear-screen projecting unit.

There will be some loss of clarity because you are making a duplicate from one non-digital format to another. Since you're watching the videotaped films in a much smaller area than when the film was originally shown, there is a higher apparent resolution. This difference brings us to the aspect problem.

The height and width of a television image are not the same as those of films, film being slightly wider. This will create empty spaces above and below the image if you attempt to include the entire picture. To fix this, center the full picture on your monitor screen, then zoom in until the top and bottom of the image fills the screen.

### **SELLING YOURSELF**

One of the hardest things for a novice Amiga video graphics creator to do is to set a price for their services. This time it's easy. Look in the yellow pages under "Photography" and "Video Services." Chances are there will be dozens of places offering film-to-video transfers. Call them and ask for their rates. Ask if they include titling, editing, and graphics. Set your rates at slightly lower prices.

As you've probably witnessed yourself, most people who have never seen or heard of an Amiga are extremely impressed by the video graphic capabilities. Most services offer titling which consists of blocky-looking, lo-res lettering and limited number of colors. Compare that to a hi-res animated title done in DeluxePaint III with some colored Kara Fonts!

### **GOING FURTHER**

It is likely that your services will come in handy to many families. Many people enjoy viewing old films, but dislike the hassle of setting up the projector. Once the transfers are made, the old films (and projector) can be discarded. All of those films are now captured on a modern videocassette!

Viewers may be amazed at the added text and graphics and curious about the equipment used in the finished product. Using the same techniques, you can also transfer slides and photographs to video tape. Try combining movies, slides, and photographs into a truly awesome video scrap-book. With the power of the Amiga, the possibilities are endless.

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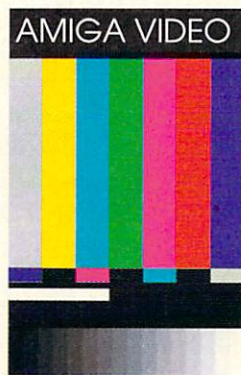
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# UNDERSTANDING TIME BASE CORRECTORS

by Matt Drabick

WITH THE INTRODUCTION of the long-awaited Video Toaster from NewTek, the words "time base corrector" have become a part of the Amiga community's language. Everyone is saying that you have to use a time base corrector, or TBC, if you want to use the Toaster with a VCR. Just what exactly is a TBC and what does it do?



This chart compares the features found in some of the major TBC's on the market today.

Simply put, a TBC corrects time base error. While the video output of a camera is stable, whenever a video signal is recorded, time base error, or jitter, is introduced. Expressed more accurately, the sync and subcarrier

components of the video signal aren't occurring at the correct time. This is mainly due to the head drum assembly (a revolving cylinder that contains the record and play heads) not spinning at a constant speed and the tape moving past the heads at an inconsistent velocity, despite the best efforts of the VCR's servo systems. The results of time base error are wrong, smeary colors when the videotape is played back, skewing or hooking at the top of the picture, and even the video image flipping or rolling at an edit point due to

	Y/C Video	Correction Window	Freeze Frame	Noise Reduction	List Price
Prime Image 25	No	16	No	No	\$1995
Prime Image 25S	Yes	16	No	No	\$2490
Prime Image 50	No	525	Yes	No	\$2295
Prime Image 50S	Yes	525	Yes	No	\$3490
FOR-A FA-220	No	525	Yes	Yes	\$2950
I.Den IVT-7	Yes	525	Yes	Yes	\$2995
Hotronic AE61	No	16	No	No	\$1800
Hotronic AE61S	Yes	16	No	No	\$2200
Hotronic AF75	Yes	525	Yes	Yes	\$2600
Nova 700	No	32	No	No	\$2290
Nova 710S	Yes <sup>(1)</sup>	32	No	No	\$2890
Nova 800	No	525	Yes	No	\$2890
Nova 810	Yes <sup>(1)</sup>	525	Yes	No	\$3490
DPS Personal TBC	Yes <sup>(1)</sup>	525	No	No	\$995

(1) is Y/C in only



weak, unstable sync. This can make it extremely difficult to perform glitch-free edits and prevents using the raw, uncorrected video output with most production switchers.

Time base error isn't normally a problem when playing back a videotape on a monitor or television set. This is due mostly to the inherently tolerant nature of monitors or TV sets and the way that the color portion of the video signal is processed by most VCRs. Time base error really becomes an issue when a VCR is being used in an editing room or TV studio. The very first time that I used a character generator (a device much like a video typewriter that electronically generates letters, numbers or symbols on-screen over a video

made up of 30 frames per second (actually 29.97 frames per second). A frame is actually a still image. When a succession of these still images or frames are played back at speed the brain is fooled into thinking it is seeing motion thanks to something called persistence of vision. Anyway, each frame is comprised of 525 horizontal scan lines. A scan line paints color and black and white (chrominance and luminance) information onto the television screen to make the image that we watch. Remembering that there are 29.97 frames per second and 525 scan lines per frame, this works out to 15,734 horizontal scan lines per second.

Each of these horizontal scan lines should take 63.5 microseconds to paint

image becomes more visible, the time base error of both signals prevents a blend of the two signals. Because a Video Toaster is essentially a four-input video switcher, it shouldn't be surprising that using a TBC is necessary.

Only part of the problem of using VCRs with the Video Toaster has been solved. Another consideration is system timing, or the phase of the sync and subcarrier. Sync defines the beginning of each horizontal scan line and the subcarrier defines the hue and saturation of the colors being displayed. It is important for the sync and subcarrier of any VCRs (or cameras) used with the Toaster to be in phase with each other. If not, the result will be horizontal shifts when wiping or dissolving

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## It might be helpful to understand more about the nature of a video or television signal in order to gain an even better insight of what a time base corrector actually does.

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background) with the raw, uncorrected output from a VCR, I began to understand what time base error really was. The credit lines that I had so carefully typed on the character generator were nervously jumping up and down when recorded over some background footage from a VCR. However, when I used a video camera instead to supply the background (the lens was capped) the credits were perfectly stable. Since a video camera generates a signal in a purely electronic fashion, it is stable. A VCR produces time base error because it uses moving parts as well as electronics. When I finally had access to a time base corrector, the output from the VCR to the character generator was essentially as stable as using a video camera.

It might help to understand more about the nature of a video or television signal in order to gain an even better insight of what a time base corrector actually does. A color video signal is

itself on-screen before the next line is painted. Each and every scan line should take that much time to exist, no more and no less. A camera does this easily. But a VCR has to record all of that information and play it back accurately while using moving parts (the rotating head drum assembly and the tape itself) to do so. Part of the work that a TBC performs is making sure that each of these scan lines begins and ends at the proper time. Without a TBC, some of the scan lines will be too long and some will be too short. Vertical lines in a video image, such as a telephone pole, will start to look slightly wavy or uneven due to the non-uniform length of the scan lines.

The situation becomes worse when trying to mix together the output from two VCRs using a video switcher. When performing a dissolve between two uncorrected VCRs so that one image gradually disappears as the second

between video sources, as well as color shifts (wrong colors). The solution is to adjust the sync and subcarrier of each VCR with a TBC so that all of the video signals are in phase with each other.

TBCs are often classified by the number of scan lines that they can correct in memory, often called its window size. Finite TBCs correct only 16 or 32 lines, while infinite TBCs correct the whole frame of 525 lines. Before the price of memory dropped so drastically, there was a significant price difference between the two. Now the price difference isn't that great, often just a few hundred dollars. Besides correcting a greater window and generally doing a better job of correcting time base error, infinite window TBCs can work with all VCRs, including consumer models that don't work with advance sync. Most 16 or 32 line TBCs are designed to work with professional VCRs that accept advance sync.



Not too long ago, the cost of a professional TBC easily exceeded \$8,000. Today, a reliable and well-designed TBC can be purchased for well under \$4,000, with some of the base models just under \$2,000. This has made purchasing a TBC, once a necessary but very expensive item in an editing system, much easier to afford.

Many manufacturers of TBCs offer a large selection of models to choose from. In addition to selecting between finite and infinite window TBCs, you might want to consider whether the TBC can input and output multiple video formats such as composite video, Y/C video (Super-VHS and Hi-8) and component video. Other features to look for are the option to capture frames of video (freeze frames), chroma noise reduction for improved picture quality, and the ability to do digital effects such as strobe or solarization. Many TBC manufacturers sell a basic model and then offer additional features with that same model, such as Y/C capability and full frame memory, with a corresponding increase in price. The following is a random sampling of some of the more affordable TBCs to choose from.

Prime Image has an extensive line of TBCs. Representing the low cost end of that line are the Models 25, 25S, 50, and 50S. Both the 25S and 50S are Y/C versions of the 25 and 50. The Model 25 is a bare-bones unit that inputs a composite video signal and outputs a corrected composite video signal. The Model 50 has a full frame memory (compared to the 16 line memory of the Model 25) and offers freeze capability as well. Knowing that the founder of Prime Image is Bill Hendershot, generally credited as the creator of the digital time base corrector, it is safe to assume these are reliable units, despite their low cost.

The For-A Corporation recently announced the model FA-220, a frame memory, composite video only (no Y/C video in or out) time base corrector

with freeze frame capability. Also included is chroma noise reduction circuitry for improved image quality with multiple videotape generations. This is important when working with less expensive video formats such as VHS. For-A is well known for making high-quality products. It is a pleasant surprise to see them marketing a relatively inexpensive TBC with so many capabilities.

The ability to input and simultaneously output, or transcode, most of the available videotape formats, including composite and Y/C, is just one of the strengths of the IVT-7 from I-Den Corporation. Full frame memory, which allows for the use of consumer VCRs, and the ability to do freeze frames are other strong points. Finally, the IVT-7 has luminance and chrominance noise reduction for improved picture quality. Considering its price and capability, this is an excellent value.

Hotronic offers a series of low cost TBCs, including a Y/C model that lists for only \$2,200.00. The AE61 and AE61S are basic 16 line TBCs, with the AE61S offering Y/C video in and out as well as composite video. The AF75, for slightly more money, offers composite and Y/C video both in and out, full frame memory, freeze frame capability, and noise reduction. The AF75 rivals the I-Den IVT-7 for capability at an affordable price.

Nova offers a similar line of low cost TBCs with models 700, 710S, 800, and 810. The 700 and 710S both have 32-line finite correction and composite video input and output. The 710S has Y/C input but composite video output only. The 800 and 810 have full frame correction and freeze capability, and again input and output composite video, with the 810 offering Y/C input. Low price and reliability are attractive features of these units.

Aimed specifically at the Amiga/Video Toaster market is the Personal TBC from DPS. Designed to fit inside a

2000 series Amiga using one of the PC expansion slots, this unit is a TBC on a card, much like the Video Toaster is a video switcher on a card. At \$995.00 list price, the Personal TBC will input either a composite or Y/C video input (but sends out only a composite video signal), has a full frame memory so that it may work with consumer VCRs, and even has phasing controls for system timing. While it lacks a standard TBC feature (proc amps), the specifications quoted for the quality of the corrected video output are reasonably good, suggesting that this is a professional unit.

Now that you have a working knowledge of TBCs and know what to look for, the rest is up to you. If possible, try to see an actual working unit and judge the quality of the corrected video output. Most TBCs have a bypass switch which allows the video signal to be sent out either corrected or uncorrected, providing comparison between the two. In addition to the products mentioned above, expect some interesting new developments from Impulse and Digital Creations involving internal TBCs for the Amiga. Also, some of the VCR manufacturers are beginning to market Super-VHS models with built-in time base correctors, such as the Panasonic AG-7650 and AG-7750. This eliminates the need to buy a TBC for use with your Amiga since the VCR already has one. Regardless of what you buy, a TBC is a serious step towards improving the quality of your video and computer graphics work.

•AC•

*Please write to Matt Drabick c/o  
Amazing Computing, P.O. Box 869, Fall  
River, MA 02722.*



# Image Spinning

by Paul Larivière

Unfortunately, many of us regard poetry as a series of lines that rhyme according to a pattern, and that each line has a predictable length and rhythm. So much for the imagists! And what about blank verse and free verse? you might well ask.

No, poetry need not be lines that rhyme AB, AB, CD, CD, or any other way. Nor does a poem need to be cast in the strict pattern of iambic pentameter, or trochaic hexameter, or according to any other meter. In fact, most modern poetry tends to depart from these formal constraints.

Designed by Barbara Juster Esbensen, an award-winning author, ImageSpinning from MicroEd is a creative writing program with which you learn to shape exciting word images with the computer acting only as an idea starter. Depending on the extent of your own input, what you see at the end of a session can really be what you made.

From a databank of uncompleted lines, the computer randomly calls up nine lines. Each line has two blank spaces. You can select any number of them from two to five for completion. You select them by pressing the number of the desired lines. The order in which you select them determines the order of screen presentation. For instance, 97426 may be the order of the lines you've decided on.

After selecting and ordering your lines, the screen clears and the lines reappear in the selected order. In addition, you'll see a list of 35 words, also randomly selected by the computer. You may select from this list to fill in the two blanks for each line, or you may prefer to choose words that spring from your own creativity. The list of words is

there only to stimulate thought. As the literature for the program states, "In writing poetry, one word does really lead to another!"

After completing your selected number of lines, you have the opportunity to reshape your lines to different lengths and adding phrases for continuity and clarity. Though the program at first seems to have you compose mechanically, there's very little you can't do on your own.

Once satisfied with your creation, you can select from a series of attractive "artsy" fonts and backgrounds depicting anything from beautiful verdant fields to rolling seas or rather somber-looking "representations" for your hard copy.

To get back to the apparently mechanical approach to image making, I can say only that when many of us set out to create, we can stare for long periods of time at a piece of blank paper. This program can help jog the mind. I can envision young people, many of whom long to create but often can't self-start, getting many hours of enjoyment from using this program and printing the results in an attractive format. Imagine the sense of pride they can derive from showing their creations to family and friends!

•AC•

**Image Spinning**

**Price: \$49.95**

**Inquiry # 240**

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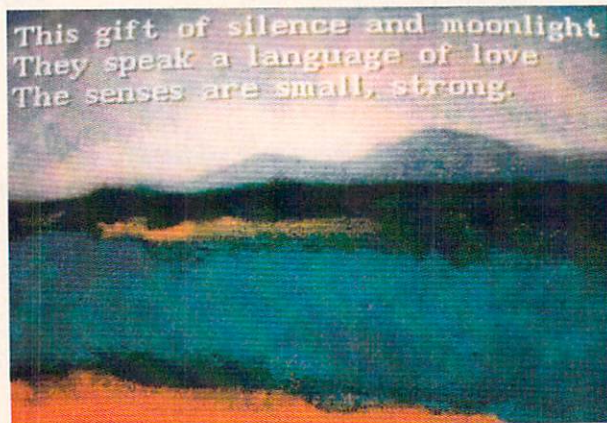


Image Spinning provides you with a choice of fonts and backgrounds.



# Genlock Holmes

by Paul Larrivée

Genlock Holmes does his classical sleuthing in a crimeless, bloodless environment in this MicroEd Educational Software Package "Stories in Reasoning with the Great Detective." Read and solve the series of mysteries to develop comprehension, using implications, inferences, and conclusions.

If you enjoy the kind of puzzle that informs you that Mike has a red car, Jim has a Chevrolet, that someone has a blue car, that the red car is the biggest car, that no blue car is a Cadillac, etc., and that you are to match each car with its owner, then you would enjoy unravelling these mysteries. This puzzle is loosely similar to one of the stories in the Genlock package concerning Eddie, the forgetful parking valet. He can't put owner and car together when it's time to fetch everyone's vehicle. He can remember only certain limited details, so fortunately for Eddie, Genlock Holmes is a patron at the restaurant where Eddie works and with his astonishing reasoning powers comes to his rescue.

There's at least one story—I should point out—that a user with a fair knowledge of history need not read the clues to straighten out the facts. The story concerns Genlock's distraught nephew, who has lost all of his history notes, and faced with a history exam the next morning, must know facts and dates concerning Galileo, Fulton, Newton, and Edison. He has most names, dates, and inventions memorized but can't put them together. Using his powers of deduction, Holmes saves the boy from test disaster. This one story would better serve the younger students who would need to analyze the information to make the proper connections. Of course, the other stories are fictional so that prior knowledge is no help.

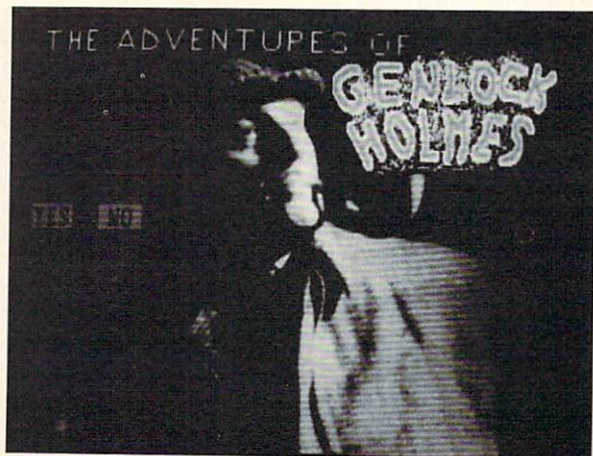
You play the great detective by clicking on the appropriate cell to complete a reasoning grid. For instance, in the example above, the names might be in rows, and car models and descriptions might make up the columns. Click on a cell that would be at the intersection of owner and car. If you're correct, the cell turns green; if you're wrong, red.

Each mystery has a target number that you must get correct. If you score too many wrong answers before completing the exercise, you're removed from the story and given another one. Of course, you can always return later to the troublesome mystery. Specific operating instructions for the program are provided by the computer upon request.

For each set of five successfully completed exercises, you're given an opportunity to unravel the secret of a password randomly selected by the computer. Successful completion of the exercises awards you with a clue to the password. If you guess the password before completing the randomly selected set, you receive bonus points.

The facts of each story can be reviewed as often as needed before you attempt the solution. If you're giving this to students as an exercise in comprehension based on deduction, you may consider whether you want to allow note-taking. I see no objection to note-taking. After all, without his notebook, Holmes could get as confused as you and I distinguishing from among Smythe, Smith, Smithe, Saunders, Sanders, and Senders. Now, pray tell, old man, which one did you say had the mole on the right cheek, not on the left?

•AC•



Genlock Holmes does his sleuthing in crimeless, bloodless mysteries.

**Genlock Holmes**

**Price: \$49.95**

**Inquiry # 239**

**MicroEd Educational Software**

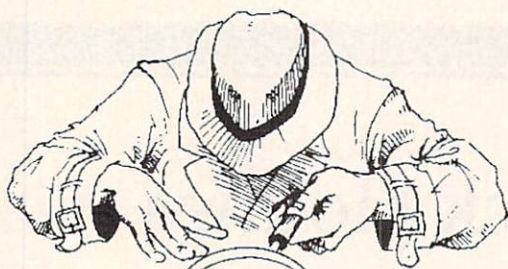
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# R O O M E R S

by The Bandito

*[The statements and projections presented in "Roomers" are rumors in the purest sense. The bits of information are gathered from a third-party source from whispers inside the industry. At press time, they remain unconfirmed and are printed for entertainment value only. Accordingly, the staff and associates of Amazing Computing cannot be held responsible for the reports made in this column.]*

The Bandito has always believed that the Amiga is the best game machine out there. And other people agree; you can tell from the amazing number of games, both commercial and shareware. Unfortunately, some of the wrong type of people are also writing games for the Amiga. The Bandito has learned that NeoNazis in Austria have been writing games with Nazi themes for the Amiga. They distribute them for free, hoping to spread their ideology along with the game.

The games themselves use pretty sophisticated graphics, and the subject matter is about as repulsive as you would think. In one game, "KZ Manager" (German slang for concentration camp), the player manages a concentration camp, selling lamps made from human skin, gold tooth fillings and dog food to purchase gas to kill Turks and Jews. The game has explicit images of human torture and Hitler. The winner becomes a member of the Gestapo, shown with a tortured prisoner in background.

Other games are multiple choice quizzes designed to test your "Aryan" knowledge. There are as many as 140 different games that run on various computers, but many are Amiga games. The games are often posted on BBS's in Austria, and as many as 22% of Austrian school children know of the games.

The Bandito can't imagine a more disgusting perversion of computer technology. At least in the press reports the Amiga usually isn't identified as the computer that the most graphic of the games appear on. The Bandito calls on all Amiga fans in Europe to stamp out such products wherever you may see them, and report it to the authorities. Hopefully the Amiga's image won't be tarnished by association with such "games."

## ENTERTAINMENT THIS YEAR

The Bandito can hardly keep up with the financial news about entertainment software companies. This time it's Software Toolworks; they say they expect to lose as much as \$20 million in their fourth quarter, on sales of \$9 million. Why is that? Heavy investment in Nintendo products, many of which were returned. Hey, the Bandito has a simple answer: try doing Amiga games instead. Less costly, better looking, and far less risk. Of course, you may not sell a million copies, but then nobody's doing that in the Nintendo market these days, anyway. Your chances are better buying a lottery ticket—maybe Toolworks should try that.

Contrast this gloomy picture to Electronic Arts, which has just reported its first 100 million dollar plus year. And here's a big surprise: Trip Hawkins is no longer CEO! Don't be too upset, he is still chairman of the board. The Amiga has lost one of its great supporters at the entertainment giant, though. These days, Electronic Arts is mostly making money on Genesis cartridges, and they are planning to be a big player in the new 16-bit Nintendo market. We'll still see Amiga titles from them, in fact, they report a 40% increase in disk-based sales and expect a further increase of 25% over the next year.

One more note: Electronic Arts is not planning to put any titles on CDTV at this time. In my opinion, they want to wait and see how CDTV sells before they create products for it. A far cry from the early days of the Amiga, when Electronic Arts committed 11 titles in development before the machine even shipped. The Bandito supposes that when you get older, you start getting cautious.

In other entertainment news, the Bandito sees where Accolade is making hay with their "Made In Amiga" campaign. Nice sentiment, but not *exactly* true. At least some of those games (if not all of them) started life as IBM titles. These Amiga conversions have excellent graphics and sound, much better than companies like Origin Systems or Sierra. Seems like those guys can hardly spell Amiga, much less do a good game for one. The Bandito has heard that Sierra is looking to improve the quality of their Amiga titles. Anyway, Acco-



lade deserves credit for trying hard. Too bad their effort isn't showing up in their sales figures. They registered a minuscule 2% growth last year, based on estimates by industry observers. Maybe their Amiga titles will do better this year. The Bandito particularly recommends *Elvira* and *Star Control* as two very fine games.

## **MICROSOFT MUSCLES INTO MULTIMEDIA**

Microsoft has created a standard for a "multimedia" computer, and at least seven big computer companies (like IBM and Tandy) have announced that they will be shipping computers that adhere to this standard. So what does this standard look like? Would you believe it's a lot like your favorite computer? Here are the specs: the Multimedia PC (MPC) must have at least 2 MB of RAM, a 30 MB hard drive, a 10MHz 80286 or better CPU, a mouse, a CD-ROM drive, four-voice audio with digitized audio capability; and run Windows 3 with multimedia extensions. Microsoft is real busy right now evangelizing developers to write software for these boxes; some well-known Amiga developers are considering doing just that. Oh, and how much will these dream machines cost? The expected price range is \$2500-\$3000. Let's see, a CDTV unit with a Novia-20i inside would do the same thing, but cost you about \$2000 less. So who's going to buy these MPC things, anyway?

But for some reason, companies are lining up to create MPC's. And that's not all; some manufacturers are even considering creating MPC as a CDTV-like device; several major manufacturers are contemplating this. Look for such players to be announced in early 1992, and shipping for that Christmas season. With Apple working on a CDTV-like box, and these MPC-CDTV clones, it looks like the CDTV concept is really catching on. But will Commodore be the one to make money with it?

The Bandito has heard more about the secretive Sony-Nintendo deal for a CD-ROM device that plugs into the Super Famicom (SuperNES or SFX; pick your name for it). Sony has spent over \$1 billion dollars in R&D on CD-ROM technology, and they intend to be the

company that reaps the benefits. Their CD-ROM player boasts very high data transfer rates (approaching those of a hard disk) and much faster seek times than any CD-ROM currently available. Sony hopes this technological edge will attract developers and create better software. Of course, they also want more customers, so they're aiming for a rock-bottom \$250 retail price when it finally arrives in the U.S. market in late 1992. So a SuperNES with Sony CD-ROM player would be under \$500 list price—a tough act to follow. The Bandito only hopes that CDTV players are priced less than that by 1993. If Commodore can stay ahead of the price curve and keep building up the software base, they could still be the winner.

While we're on the subject of CDTV, the Bandito has heard of some interesting blue-sky type speculation that's being bandied about in the corridors of Commodore. What would you think of a portable CDTV player? Before you dismiss the idea out of hand, the technology to make it possible is here, and some of the longer-range thinkers at Commodore are reported to be considering it. Portable CDTV would be perfect for certain data-intensive applications. An LCD touchscreen would be the interface, with an optional IR keyboard. Initially the Portable CDTV would have a 32 gray-scale LCD screen, but eventually the screen would be an active matrix color LCD. The whole thing would weigh about six pounds and be about the size of a notebook. Great for playing games in the car, says the Bandito. If the right CDTV applications come along, this could be a tremendous product. You'd have 550 megabytes of storage at your fingertips, and the ability to run your favorite Amiga applications. You could also plug in a disk drive or add an optional hard drive to the unit. This may sound like fantasy, but it may very well happen. It's also the most likely portable Amiga that you'll ever see.

The Bandito thinks Portable CDTV would be a real coup, and solidify CDTV's place in the market. No other company is even thinking about such a device (as far as the Bandito's spies can tell), and this would put Commodore way out in front of the pack. Even if the initial price was \$2500, there would be

a market for it. And with volume production, the price would drop fast. So what do you say, Commodore?

## **BEYOND WORKBENCH**

While the Bandito (and everybody else) has been awaiting the long-overdue release of Workbench 2.0, some other alternatives may be on the horizon. Microsoft is planning to make the two big PC-compatible operating systems, OS/2 and Windows, merge into one in two years. When you realize that Microsoft is also planning to make this software portable to other platforms (like, say, the 680x0 CPU), then we could see Amigas become part of mainstream computing, while still allowing all of that cool Amiga software to run. A dream at this point, perhaps. But it may become real some day.

While you're wondering about that possibility, chew on this: Apple is thinking about licensing the Macintosh operating system. Wouldn't it be interesting if our favorite 680x0 computer could run all the software for the Macintosh without having to buy an emulator and hunt for Mac ROMs? The Bandito doesn't know whether or not Commodore is considering such a move, but it might make sense. Think about it: you may be able to run all major operating systems on your Amiga without Bridgeboards or A-Max emulators.

## **TOASTER BLUES**

As A3000 owners know, the Video Toaster won't fit into their machines. Now the Bandito hears that the Video Toaster won't fit into the new A3000T case either, according to insiders. But Commodore's not worried, because they're hoping that NewTek will release their 3000-compatible Toaster before the A3000T appears. Of course, with NewTek's on-time product release record, Commodore could be left with some egg on their face and some angry customers. The Bandito has heard rumblings from a number of A3000 owners who can't understand why the Video Toaster doesn't plug into their hardware. The A3000 owners don't know whether Commodore or NewTek is to blame, and they don't really care; they just want a Toaster that works for them. Well, you'll have to wait a while, according to NewTek.



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Meanwhile, NewTek's top engineer droids (including founder Tim Jenison) are hard at work on yet another top secret gizmo. Sure, sure, the software guys are working on the Toaster 2.0 software, with lots of new animated wipes, but everybody knows that. The exciting development is in the hardware end. The Bandito's trying to find out the new code name for the product, but no luck yet. One thing's reasonably certain, though: it won't be named after a kitchen appliance. Video Chainsaw? Video Shoelace? Tune in next column for more informed guesses...

Commodore has announced some new bundles of existing Amigas, designed to better address the needs of key markets. The Commodore Amiga 500 Starter is a version of the Amiga targeted at first-time computer users, and the Commodore Amiga 2000HD Professional is an enhanced system for the small business market. The A2000HD Pro costs a cool \$2,000 and comes bundled with a word processor, a spreadsheet, a database, a desktop publishing program, business graphics, print, and a music program, and a program to read and write MS-DOS files. Hey, if it's for small business, how about an accounting package? Meanwhile, the A500 Starter system costs \$599 and comes bundled with simulations and other games. This one's clearly headed for the gamer; Commodore's strategy seems to be to convince Nintendo players to move on up to a real game machine. Gee, Mom and Dad, I can do my homework on it too! Right.

Software Publishing Corporation, one of the Big Guys in IBM software, has bought Precision Software, makers of Superbase 4, for \$25 million in cash and securities. Primarily, SPC is interested in the Windows version of Superbase, which so far is the only graphic database for Windows. Of course, what we're concerned about is what this means for the future of Superbase 4, the bestselling Amiga database (the latest version, by the way, has some very cool features, according to database junkies). No telling yet what will happen to the Amiga version. Software Publishing certainly has never handled Amiga products before and has no understanding of the market. Will they sell Superbase 4 to some other company? (You can bet that someone like Gold Disk would be interested.) The deal between the two companies still isn't final as of this writing; it still has to be ratified by both boards of directors. The Bandito will keep you posted on this situation. *[This report remained unconfirmed at press time—Ed.]*

### FAT CATS

The Bandito has dug up some interesting figures on the salaries of Commodore's top officials, courtesy of an industry study done by *Computer Reseller News*, a computer trade journal. After reading the article, the Bandito asks the question: Is Commodore executive compensation exorbitant or outrageous? Let's look at some figures. Mehdi Ali (Commodore CEO) is the fifth highest paid executive in the com-

puter industry, at \$2,015,949 per year, a 46% increase over last year, by the way. Did the sales go up that much? The Bandito must have missed it if they did. He gets paid more than executives at many larger companies. Irving Gould (chairman of the board) is #7, at \$1.75 million, a 40% raise from last year. Further down the list, Harry Copperman earned \$459,142 before he left his post as head of Commodore U.S.. Henri Rubin took home a mere \$435,511, a 13% drop over last year's salary. Poor guy. How does he manage to make ends meet? He probably has to sharpen his own pencils.

The stock holdings are even more interesting. Irving Gould ranks 13th on the list with \$98,930,070 (!) in Commodore stock as of May 6 prices (he was well over \$100 million when Commodore stock was around 20). Mehdi Ali owns a mere pittance compared to that: \$6,089,730. It's hardly worth mentioning that poor Henri Rubin has only \$4,784,610 worth of stock. Mehdi Ali was also granted \$9 million in stock options over the last three years.

So are these guys really earning their keep? You'd think Commodore sales were booming for them to get salaries and stock options like that. The quarterly earnings haven't been all that stellar lately, says the Bandito. Maybe they should put a little more of those salaries into product development and less into their pockets—at least, if they want to be an industry leader. Just a thought, mind you. The Bandito is sure that Commodore has excellent reasons for such high salaries; it's just that the Bandito can't think of any. Can you?

### OLD SOFTWARE FOR NEW

The original HyperCard knockoff on the Amiga, UltraCard, has found a new home since Mike Lehman went to work for Commodore (he did a lot of programming for CDTV). UltraCard has been picked up by the folks at Impulse, where they are enhancing, rewriting, and debugging the software. By the summertime it should be released as Foundation, the working title, and we hope it will be as stable and solid as its new name.

•AC•



# Summer Consumer Electronics Show '91

## Part 2

THIS IS THE SECOND PART OF OUR two-part series (please see Part 1 in AC's July 1991 issue) on products and services shown at the Summer Consumer Electronics Show in Chicago June 1 through June 4. While CES is always a massive event, the summer edition of this show remained smaller than its winter counterpart held in Las Vegas in January. The size difference did not seem to affect the announcements from game manufacturers, however. Although both Sega and Nintendo maintained extremely large acreages of territory, Amiga announcements were plentiful.

Konami, Inc. has created an exciting line of new entertainment titles for the Amiga. With **Back To The Future III**, **Teenage Mutant Ninja Turtles—The Arcade Game**, and **Predator II**, Konami has



InnerPride Software, Inc.'s new Copyright, the hardware/software utility copy program.

been taking advantage of movie titles in creating Amiga excitement. **Back To The Future III** (available in August) makes you dodge the cross-fire of an Indian ambush, test your quick draw skills at the shooting gallery, sling pies at Buford Tanner, and steal a speeding locomotive. **Predator II** (available in September) also mirrors the movie action. As Mike Harrigan, you and a vicious alien become caught in the cross-fire of a major drug war. **Teenage Mutant Ninja Turtles Arcade** (due in October) is based on the popular arcade game.

Konami has also created a few completely original concepts. **The Killing Cloud** (due in September) is a mystery adventure game set in the 21st century. As a hover-bike-flying San Francisco policeman, you must collect information on the Black Angles while San Francisco is covered by a toxic cloud.

**Bill Elliot's NASCAR Challenge** (available by August) is a more contemporary racing challenge. Konami has created a racing game with some of the features and care found in the best Amiga flight simulators, including multiple views and instant

replay from the competitor's perspective. Detailed images are promised that will make this game come alive. Konami is so excited about this realistic challenge that the racer with the highest score received by November 25, 1991, will win a trip to the 1992 Daytona 500 (contact Konami for details).

Other titles announced by Konami include **Riders of Rohan** (based on J. R. R. Tolkien's *Lord of the Rings*), **Spacewrecked: 14 Billion Light Years From Earth** (September), **Champions**, and **Speedball 2** (September). Konami has grown impressively over the past year with multiple games on a variety of platforms.

ReadySoft announced an agreement with Entertainment International to bring Empire products to North America. **Team Yankee**, a 3-D tank simulation based on the best-selling novel, will be available in August for CDTV. They have also announced **Space Ace II**, **Bor's Revenge**, a Sullivan Bluth game, and **Guy Spy**, an animation arcade game with full control over the animation characters.

Sullivan Bluth Interactive Media, Inc. announced that both **Sea Beast™** and **Maelstrom™** would be available for CDTV in the fourth quarter of 1991. In **Sea Beast**, you are Barnacle Bill battling the Sea Beast to free Serena while rescuing civilization. This time-traveling game takes you from dinosaurs to pirates. **Maelstrom** is a joint effort between Sullivan Bluth and Syd Mead (who is noted for his work on the films *Tron*®, *Bladerunner*®, and *Shortcircuit*®). With **Maelstrom**, they have created a game of both arcade action and strategy play. NEMESIS described their Go Product line; **NEMESIS Go Junior**, **Go Master**, and **De-luxe** all feature a choice of three board sizes; hints; reasons why a move is played; retracting and replaying any number of moves; saving games to disk; handicapping to even the game between players; beginner through

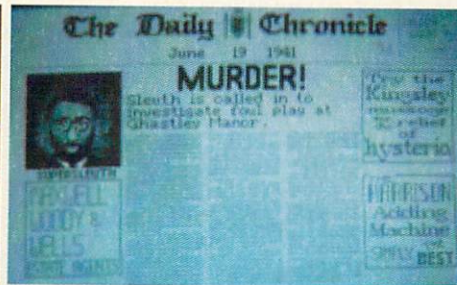


The Miracle Piano Teaching System by The Software Toolworks.

advanced opponent; estimated scoring during play; Chinese and Japanese rules; real-time clocks; and stone number, either last move only or all moves. The NEMESIS Go Product line will be available for Amigas this Summer.

Software Toolworks introduced the **Miracle Piano Teaching System** (\$479.95) at CES. The Miracle utilizes a smart and interactive network with Artificial Intelligence software to teach children and adults how to play the piano. The program begins by using an assortment of entertaining video games, progressive lessons, and various musical pieces to teach the fundamentals of piano technique. Based on the player's individual needs and pace, the Miracle will customize piano lessons which are instructive and fun. The Miracle System includes the appropriate software cartridge or floppy disk with the various lessons and games, a corresponding Miracle Cable to connect the keyboard and the video monitor unit to allow interface, and a state-of-the-art electronic piano keyboard. The Miracle Piano Teaching System will be available for the Amiga this Fall.

Capstone Software announced plans to release **Home Alone** (\$39.95) for the Amiga in the first quarter of 1992. Based on the



Amiga game news was rampant as dozens of developers announced new products. **Back To The Future III** by Konami (left) and **Murder!** by U.S. Gold were among a number of arcade and strategy games headed for the Amiga.



# *Presenting 31 reasons why AC's TECH is the most informative technical journal for Amiga users—*

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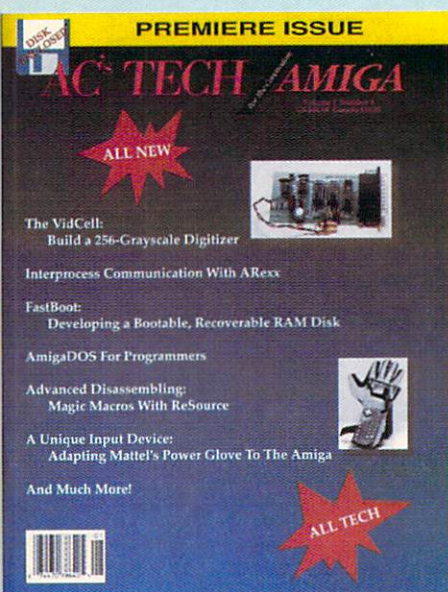
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Put the asterisk back into the Amiga wildcard—but only under AmigaDOS 2.0.
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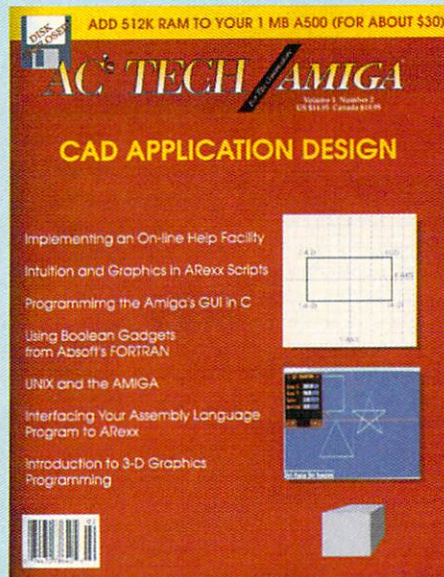
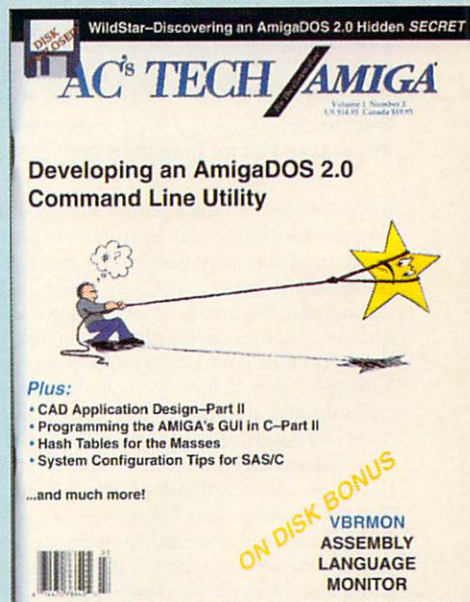
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The Fractal Engine by Psygnosis allows the Amiga to display either real time interactive fractal simulation (left) or stored computer animation (right).

mega-hit movie, *Home Alone* puts you in the role of 8-year-old Kevin, trying to foil the break-in of two inept burglars. In this two-phase action game, first you must rush throughout the house, creating traps and pitfalls; then lure the burglars into a wacky chase through your clever contraptions as you protect your home—alone. Comic twists and infinite variations, plus digitized pictures and sounds from the movie abound.

Capstone also announced new promotions for *The Cardinal of the Kremlin* (\$49.95). Based on Tom Clancy's novel, antimissile defenses and satellite technologies provide the central action in this computer simulation. Players are challenged to develop strategic defenses for America, manipulate a myriad of international forces, deal with espionage, terrorism, and global politics in order to win the technological race against the Soviets.

Psygnosis showed off five of its newest games, one of which is available now for Amigas, with the other four coming out in the third quarter of 1991. *The Killing Game Show* (\$44.99) lets you control the biomechanically re-engineered contestants as they struggle up the walls of 16 hellish pits of death, confronted by Hostile Alien Life Forms, and mind-wrenching traps and puzzles, constantly driven forward by the shining "Deadly-to-Organic-Life" liquid rising from below.

The four games yet to be released are *Leander*, *Agony*, *Amnios*, and *Barbarian II*. In *Leander* (\$49.99), you are the handsome hero and savior of princesses. Travel across three danger-fraught worlds, fighting powerful enemies, and finding and using spells,

potions, and weapons to your advantage to save Princess Lucanna.

*Barbarian II* (\$44.99) brings Hegor the Barbarian into the '90s. Hegor must fight his way through the dark forest near the village of Thelston. Then he has to proceed through the barbaric landscape dodging deadly traps and dealing with dastardly enemies before entering the final conflict with Necron, deep within the evil temple sanctuary. Your mission is to find and destroy Necron before he completely destroys the land and overruns the human race.

*Agony* (\$49.99), from the programmers of *Unreal*, is a new adventure full of magic, mystery and mayhem. As Leffly, the heir to the secret of universal energy, you will fight your way through six agonizing levels of magical mayhem. Confront your chilling challenges in human form, take flight as an arcane owl, or battle your enemies in the form of a gruesome ghost.

*Amnios* (\$44.99), also available in the third quarter of 1991, is a Symbiotic Construct of Machine-Mind and Biology. Each element is a disparate cell in an organism sharing one consciousness and purpose: to eradicate the malignancy that threatens all of life. Controlling a tiny ship, you fight your way through each of ten deadly living worlds trying to either destroy the planet's vital organs or rescue a given number of encapsulated humanoids.

In addition, Psygnosis also premiered their attention-grabbing *Fractal Engine*. The Fractal Engine is Psygnosis' newest entry into computer programming. With the Fractal Engine, either the computer can recreate a fractal gaming world animation with limited interactivity or a portion of the computer screen can be reserved for real-time fractal animation in a full interactive mode.

Psygnosis demonstrated the Fractal Engine with an animation running on CDTV of a cruise missile being chased by a high tech fighter with astounding clarity and realism. The idea is to mesh both computer animation and real-time fractal technology into a fast-paced interactive product. Although the process is ideal for games and simulations, the technique could also be used for education and training.

Electronic Arts announced plans to release *Black Crypt* (\$49.95), a fully-animated

dungeon adventure with a unique twist to point-of-view perspectives, enhanced for utilization of the Amiga's outstanding graphical and sound capabilities, in the fall of '91.

UBI Soft expects to have *Battle Isle* (\$49.95) available for the Amiga during the second quarter of this year. You are Chief of State and have complete control over the armed forces. It is up to you to launch the attack on the islands occupied by the enemy.

*Billy the Kid* (\$39.95), available from Ocean of America, is a one- or two-player action/strategy game set in the wild West. It allows the player to assume the identity of either a gun-toting desperado, or Billy's ex-best friend, sharp shooting sheriff Pat Garrett.

Mindcraft demonstrated *The Magic Candle Vol.2: The Four and Forty*, which will be available during the second quarter of 1991 for IBM PC/compatibles with an Amiga version to follow. Volume 2 features a new, improved user interface. You can now capture conversations and save them or print hard copies, eliminating the need for constant note-taking. With the new "assignment" feature, you have up to five companions and hirelings accompanying you while others are off performing tasks.

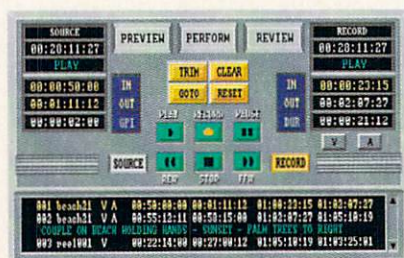
Mindcraft now has *The Keys To Maramon* and *The Rules of Engagement* available for the Amiga. In *Maramon* (\$49.95), the island town is having problems. Hordes of horrible monsters are terrorizing its citizens and looting its buildings. Only you, the hero or heroine hired by the town council, can protect Maramon. *The Rules of Engagement* (\$59.95) is a real-time, strategic, space combat game. You command a fleet of starships, engaging enemy ships in multiple combat missions.

Strategic Simulations, Inc. announced the Amiga version of *Renegade Legion: Interceptor* (\$59.95), a science fiction strategy game in which users can wage a campaign of galactic struggle between the Terran Overlord Government and the Renegade Legions. Make your own custom star fighters or use one of the 24 standard fighter types included.

Also available now is *Conflict in the Middle East: Arab-Israeli Wars 1973-?* (\$59.95) from Strategic Simulations, Inc. Which side really won? This advanced strategy wargame simulation offers incredible detail at the brigade/divisional level. You control every squad, vehicle, and gun tube.

LucasArts Entertainment, Interstel, and California Dreams all announced titles that they expect to be released for the Amiga sometime in the future. LucasArts is working on *Indiana Jones and the Fate of Atlantis*, in which Indy is drawn into the mysteries of the legendary under-the-sea site of an advanced—and extinct—civilization. *Armada 2525* is coming from Interstel.

Below: AmiLink/CI by RGB Computer & Video is a consumer version of their professional video editing tool—AmiLink/VT.





It pits players against up to five opponents, human or computer, each commanding a powerful armada of warships in an interstellar battle to conquer the galaxy. California Dreams will have **Solidarity** ready for the Amiga during the third quarter of 1991, for \$59.95. They are also developing **Wreck Hunters** (working title), an interactive role-playing adventure that ships you around the world to submerged scenes of tantalizing historical interest.

U.S. Gold announced three new games: **Knights of the Crystallion**, **Cybercon**, and **Murder!**. Available only for Amigas, **Knights of the Crystallion** (\$59.95) takes you to Orodrid, a city rich in culture, music, art, poetry, politics, and religion; a city made of bone. The journey through the skull is a dangerous one, but success will bring you great power and position in Orodrid society.

In **Cybercon** (\$44.95), you have volunteered to execute Operation Nemesis—The destruction of the merciless Super Defense computer gone mad: **Cybercon III**. Equipped with your enhanced power armor, you must penetrate the defense complex protecting **Cybercon III**'s brain stem and deactivate it.

**Murder!** (\$44.95) sets the scene; you solve the murder. Nearly three million unique murders provide ultimate re-playability. There are four difficulty levels, twenty potential murder weapons, and the facility to take and match finger prints.

Arena Entertainment expects **Reach for the Skies** to be available for the Amiga this Fall. Set in WWII, this is a dramatically life-like tribute to the warriors who battled for the sky. Gallant heroes swoop into one confrontation after another in classic Spitfires, Hurricanes, and Messerschmitts.

Innerprise Software announced their 1991 Entertainment titles. **Cyberblast** (\$49.95) has over 64 levels of arcade action, two-player simultaneous play, over 20 different sized enemies, along with bombs, zappers, maps, and grenades. **The Entity** (\$49.95) features huge, screen sized, intelligent monsters whose weak spots must be discovered in order to defeat them. Four upgrades of weapons and arcade quality graphics. In **Hoi** (\$39.95) you must find your way through five levels of jump and run, shoot and fly adventure. Pick up bonus points and strategically overcome lots of obstacles including moving cranes, bouncing spiders, flying airplanes and more.

Innerprise also demonstrated **Copy-right**, their complete hardware/software utility copy program. Copyright includes a software/hardware multi-format back up system and a special calibration disk. Copy-right is the first Amiga copier that verifies your copy by actually reading back to the source disk during back up to ensure a perfect copy without rebooting the game. It copies without the need of parameters, allows you to copy four disk drives at the same time, copies long and short tracks, displays errors and much more.

RGB Computer & Video, famous for their video-editing Amiga system—AmiLink/VT, has produced a consumer version of their video tool, **AmiLink/CI**. AmiLink/CI allows you to edit between any two Panasonic 5-pin (Control-M) or Sony Control-L VCR or camcorder. With AmiLink/CI and an Amiga with one megabyte of RAM, you can edit an entire tape from a computerized list of up to 999 events or run one edit at a time. The Preview feature lets you see your edits before they hap-

pen, while the Review feature shows your edits after they have been completed. AmiLink/CI can be expanded to work directly with the Video Toaster as well as other equipment. Utilizing an easy-to-use graphic interface, AmiLink/CI will be available in September starting at \$999.95 for a cuts-only system (call for price and availability of more advanced equipment).

## A CORRECTION

In part one of this report, we inadvertently listed the Mandala CDTV project with the Amiga version price. The corrected information is below.

The Vivid Group announced that the Mandala Virtual Reality System will now be available as a software package which currently runs on Amiga 500, 1000, 2000 series, and Amiga 3000 systems for \$495.00. The Mandala VR System allows users to create interactive environments that can be entered and controlled through the use of any video camera. Scenes are created using standard Amiga paint programs. Creating Mandala VR environments is quick and straightforward using mouse-activated commands in a hypercard-like interface.

The Vivid Group also has plans for Mandala and CDTV. The Vivid Group expects to release Mandala for CDTV sometime in November. This version will include a VidStick, which will combine a camera and digitizer in one. This is not, however, an authoring system, and you will not be able to create your own scenes with it. The retail price is expected to be under \$200.00.

•AC•

## COMPANIES MENTIONED

Arena Entertainment  
2061 Challenger Drive  
Alameda, CA 94501  
(415) 522-3584  
Inquiry #247

California Dreams  
130 A Knowles Drive  
Los Gatos, CA 95030  
(408) 378-0340  
Inquiry #248

Capstone  
14202 SW 136th Street  
Miami, FL 33186  
(800) 468-7226  
Inquiry #249

Electronic Arts  
1820 Gateway Drive  
San Mateo, CA 94404  
(800) 245-4525  
Inquiry #250

Innerprise Software, Inc.  
128 Cockeysville Road  
Hunt Valley, MD 21030  
(301) 785-2266  
Inquiry #251

Interstel  
P.O. Box 57825  
Webster, TX 77598  
(713) 946-7676  
Inquiry #252

Konami, Inc.  
900 Deerfield Parkway  
Buffalo Grove, IL 60089  
(708) 215-5100  
Inquiry #253

LucasArts Entertainment  
P.O. Box 10307  
San Rafael, CA 94912  
(800) 782-7927  
Inquiry #254

Mindcraft  
2341 205th Street  
Torrance, CA 90501  
(800) 525-4933  
Inquiry #255

NEMESIS  
P.O. Box 25460  
Honolulu, HI 96825  
(808) 396-5526  
Inquiry #256

Ocean of America, Inc.  
1855 O'Toole Avenue  
Ste. D-102  
San Jose, CA 95131  
(408) 954-0201  
Inquiry #257

Psygnosis Limited  
29 St. Mary's Court  
Brookline, MA 02146  
(617) 731-3553  
Inquiry #258

ReadySoft, Inc.  
30 Wertheim Court, Unit 2  
Richmond Hill, Ontario  
Canada L4B 1B9  
(416) 731-4175  
Inquiry #259

RGB Computer & Video  
3944 Florida Blvd., Ste. 4  
Palm Beach Gardens, FL  
33410  
(407) 622-0138  
Inquiry #260

Software Toolworks, Inc.  
60 Leveroni Court  
Novato, CA 94949  
(415) 883-3000  
Inquiry #261

Strategic Simulations  
675 Almanor Avenue  
Sunnyvale, CA 94086  
(408) 737-6800  
Inquiry #262

Sullivan Bluth Interactive  
Media, Inc.  
2501 W. Burbank Blvd., Ste.  
201  
Burbank, CA 91505  
(818) 840-9446  
Inquiry #263

The Vivid Group  
P.O. Box 127, Station B  
Toronto, Ontario  
Canada M5T 2T3  
(416) 340-9290  
Inquiry #264

UBI Soft  
15 Atwood Avenue  
Sausalito, CA 94965  
(415) 332-8749  
Inquiry #265

U.S. Gold  
distributed by Accolade  
550 South Winchester Blvd.  
San Jose, CA 95128  
(408) 246-6607  
Inquiry #266



# bug bytes

by John Steiner

The latest in tips,  
workarounds and upgrades

---

**product:** Scribble Platinum Edition  
**re:** program update  
**source:** Micro-Systems Software  
spokesperson

This month, I received a letter from F. Rawls Sansone, Director of Product Support for Micro-Systems Software, in response to a mention of MSS's Platinum program series in the May 1991 "Bug Bytes" column. Sansone noted that the patch described in the article was necessary because of errors in program coding. The problems stemmed from errors by both Micro-Systems and Commodore programmers.

Sansone went on to state that the most current versions of their programs have version numbers which end in 5. These versions correct the above-mentioned problem and provide improved support for the AmigaDOS 2.0 color scheme. These new versions are available for \$9.95 to registered users. When you order, be sure to return the

master disks. *Micro-Systems Software, 12798 Forest Hill Blvd., Ste. 202, West Palm Beach, FL 33414, (407) 790-0772, Inquiry #238.*

---

**product:** Vortex ATonce board  
**re:** installation problems and available update  
**source:** reader response

A letter from Mohamed El-Rouby of Brooklyn, NY, provided a solution to the Vortex ATonce board problem that occurs when installing the unit into a revision 5 motherboard. He commented that it took him a while to determine a solution, but what he found is this: "If you have ATonce System Disk Version 1.1/12-90, you must *not* install the Gary Adapter." The hardware will work regardless of whether you change other.dsg to atonce.dsg or not.

El-Rouby also said that he found the speed of the ATonce board to be equal to a 4.1 AT, which is slower than usual, but it works just

fine. He recently received an upgrade disk from Vortex which includes EGA and VGA monochrome support. The disk is labeled version 1.27/3-91. Without changing any file on the System disk (except, of course, AT Install Preferences), install the Gary adapter and run ATonce. El-Rouby said that the new release works much better than release 1.1 and he has tested the speed to be equal to an 8.7 AT.

He went on to say that the mouse doesn't seem to work even though the documentation states that support exists. Even when the mouse driver has been installed and a program supports it, the mouse pointer refuses to move. If you know how to make the mouse driver operate properly, drop me a line and I'll spread the word.

J. C. Comerford of Woodland Hills, CA, wrote regarding comments made in the May 1991 "Bug Bytes" column about the Vortex



ATonce board. He noted that he was also having problems with his ATonce, and his dealer suggested that he not use the Gary module.

Comerford also commented that A-MAX II is not yet compatible with many A500 accelerators because of conflicts with memory map allocation when the program starts. He notes, "I have also yet to get it to recognize my TrumpCard Pro hard drive." If you have any suggestions that might lead to the solution of either problem, let me know.  
*ATonce, Vortex Computersysteme GmbH, Falterstrasse 51-53, D7101 Flein bei Heilbronn, Germany, (011) 49-713-159-720, Inquiry #243.*

---

**product:** Video Effects 3-D  
**re:** problems encountered while using genlock  
**source:** reader response

A fax from Arnold Raats of Bedfordview, RSA comments on problems he has been having with InnoVision Technology's Video Effects 3-D software. Raats has owned the software since the first PAL release, and has applied all workarounds and purchased all upgrades that have been offered; yet he is still having problems with the program while using a genlock. "On my 500 and 2000 machines, both with 1 MB Agnus, the software behaves until a genlock is connected and then rapid horizontal oscillations occur, when VidFX or VidPLAY

are selected." InnoVision Technology has not been very helpful in responding to this problem, according to Raats. He also mentioned that the program does not work on his Amiga 3000 under either Workbench 1.3 or 2.0. Has anyone else had this problem and found a solution?

---

**product:** WaitMount  
**re:** program which mounts drives and avoids spinups  
**source:** reader response

Walter Strickler of Boulder, CO sent me a disk with a program he wrote. The program avoids the long spinup problem encountered with some drives that are not immediately recognized by the A3000. He installed a Seagate ST157N drive and used the Mount command to mount the drive, rather than using the automount feature built into the A3000.

He then used a program he wrote called WaitMount, which tries repeatedly to get a lock on the device being mounted. When the WaitMount command succeeds, you know that the device is ready and available for use. He comments that the program works fine with mounted devices, but has not tested it with automounted devices. Unfortunately, after some experimentation and a call to Mr. Strickler, I concluded that the program will not be of benefit to systems with automounted devices. I could, however, remove the device from my automount

sequence and mount it from an entry in the DEVS subdirectory. I will be experimenting with this option to see how it works out.

During our phone conversation, Walter mentioned that since sending the program to me, he has found a problem with ARP commands when used with a device that has been "WaitMounted." He suggests not using ARP commands with WaitMount devices until a solution becomes apparent.

The program, WaitMount, has been placed into the public domain. If

you would like a copy of the program, send me a blank, formatted disk and a self-addressed return envelope.

---

**product:** Superbase Professional 4  
**re:** help with calculations, installation, and reorganizing files  
**source:** Email

Kevin Davidson sent an electronic mailgram regarding a problem he's discovered while working with Superbase Professional 4. He also included the official workaround.

People who have upgraded from Superbase 3 will run into this problem if they use form calculations.

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Davidson writes that Superbase version 3 forms containing form calculations read improperly by the version 4 forms editor.

The workaround is to load the form into the version 3 forms editor and print out the form status (this will create a list that includes all the form's details), delete all the calculations, then save the form. Load the form into the version 4 forms editor and add the calculations back as CMD functions.

Also, Davidson mentioned that the hard disk installation utility being shipped with version 4 fails to install all the parts of the tutorial and demo programs. He commented that he and two others who purchased the upgrade noticed this problem. He found that everything works correctly if you simply copy the tutorial directories manually.

The Superbase 4 manual states you can

reorganize a file onto itself. If you specify a path in the path requester, which is the same as the one containing the file, Superbase reports an error indicating that the file already exists. Davidson learned from technical support that what you must do is omit the pathname entirely to eliminate the error message. He also noted that reorganizing a file to a different directory seems to issue a spurious error message which you can apparently ignore.

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**re:** acquisition of Central Coast Software by New Horizons Software

**source:** New Horizons Software spokesperson

James Bayless of New Horizons Software has announced that his company has acquired Central Coast Software, publisher of utility software for the Amiga. Two popular programs originally developed at CCS by

George Chamberlain are Quarterback and Quarterback Tools. Both programs have been recently upgraded, and will probably be available through New Horizons by the time you read this. The current version of Quarterback Tools is 1.5, and the upgrade is free. Just send your current version original disk to New Horizons.

The current version of the Quarterback hard disk backup utility is numbered 4.3. The details regarding the upgrade haven't been announced as of yet. Contact New Horizons directly if you wish to obtain the upgrade. They are also ready to beta test Flow version 3.0, the latest incarnation of the powerful outline processor. New features include an ARexx port, autonumbering, search and replace, and split & join, among others. Details about the upgrade policy for current Flow users are to be announced when the

software is ready to ship. *New Horizons Software, P.O. Box 43167, Austin, TX 78745, (512) 328-6650, Inquiry #241.*

---

**product:** CanDo  
**re:** release of Version 1.5  
**source:** press release

INOVAtronic is now shipping CanDo version 1.5. The multimedia application software has improved ARexx support, more database features, expanded animation control and a new script editor. Registered owners of earlier versions can upgrade for \$40.00. *INOVAtronic, Inc., 8499 Greenville Ave., Ste. 209B, Dallas, TX 75231, (800)875-8499, Inquiry #242.*

•AC•

*Please write to John Steiner c/o Amazing Computing, P.O. Box 869, Fall River, MA 02722-0869. Or leave EMail to Publisher on PeopleLink or 73075,1735 on CompuServe.*

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# DIVERSIONS

## THIS MONTH:

**BANE OF THE COSMIC  
FORGE**  
**F-29 RETALIATOR**  
**PLUS,**  
**BUILDING A MULTI-JOY-  
STICK ADAPTOR**

## Wizardry: Bane of the Cosmic Forge

by L. S. Lichtmann

What do you get if you cross Dungeon Master with The Bard's Tale? You get Sir-Tech's Wizardry: Bane of the Cosmic Forge.

This description is perhaps a bit unfair. Sir-Tech has been developing its Wizardry line of fantasy computer role-playing games (CRPGs) for many years. I suspect that many of the features familiar to aficionados of such

games were introduced to computer games by Wizardry. Nevertheless, since Bane of the Cosmic Forge (BOCF) is Sir-Tech's first foray into the Amiga market, long-time Amiga gamers will inevitably make comparisons between BOCF and these two Amiga favorites.

BOCF comes on five disks—yes, five!—and, thankfully, can be installed on a hard disk. While it is supposed to be playable from floppies, I have been told that the program seems to have trouble recognizing external drives. Potential purchasers should also be aware that it requires at least 1MB of RAM. Copy protection is provided by a photo-copy-proof book of hard-to-read icons. The best that can be said about this method is that I prefer it to disk-based schemes.

As with the usual fantasy CRPGs, the objective of the game is to take a party of adventurers through a series of mazes, building them up in physical and magical characteristics, and collecting loot along the way, finally defeating evil and winning the game. The interface that BOCF provides to make this possible combines a window in the center of the screen with a party's eye view of the dungeon (similar to The Bard's Tale and many other games) and surrounding iconic representations

Bane of the Cosmic Forge allows the gamer much more freedom to select the initial characteristics of their adventurers.

 <b>GEORGE</b>		<b>M-ELF</b>	<b>RNK</b>	<b>NONE</b>
<b>STR</b> 11	<b>HP</b> 3/3	<b>THIEF</b>	<b>EXP</b> 0	
<b>INT</b> 10		<b>LVL</b> 1	<b>MKS</b> 0	
<b>PIE</b> 17				
<b>VIT</b> 7	<b>STM</b> 75/75			
<b>DEX</b> 12	<b>BONUS</b> 0			
<b>SPD</b> 9				
<b>PER</b> 8				
<b>KAR</b> 6				
<b>WEAPONRY</b>				
HAND & DAGGER 0				
SWORD 0				
AXE 0				
MACE & FLAIL 0				
POLE & STAFF 0				
THROWING 0				
SLING 0				
BOWS 0				
SHIELD 0				
<b>SKILL POINTS</b>				<b>7</b>
<b>ASSIGN INITIAL SKILL BONUS</b> <b>ADJUSTS SKILL</b> <b>SELECTS SKILL</b> <b>PRESS FOR NEXT CATEGORY</b>				



of the six adventurers in one's party, like the arrangements in *Dungeon Master*.

In a number of respects, *BOCF* does not measure up well against its famous predecessors. The graphics, in particular, are simply not up to Amiga standards. They seem to be a straight port from one of the older IBM modes—one field on the Disk Options screen politely informs you that the graphics mode is EGA—and I wonder whether even IBM gamers would be satisfied with that these days. A better effort has been made with the sound effects, which at least make use of the Amiga's superior audio capabilities.

A considerable effort has also been made to enliven the game with animation, particularly during combat. Giant bats swoop around your party, scalawags swing their weapons and jostle for position as they assault you, and your missile weapons visibly fly into groups of your enemies. On the whole, though, I wish that more effort had been expended on graphics and less on animation. I found the much simpler animation in *Dungeon Master* more effective.

Those with strong tastes one way or the other should note that combat in *BOCF* is round-based, as in *The Bard's Tale*, rather than real-time, as in *Dungeon Master*.

It is in the area of player character features and development that *Bane of the Cosmic Forge* really shines. No fewer than eleven races and fourteen character professions are available for use. Particularly interesting are the "combination" professions, such as Ninja and Lord, which blend physical skills such as thievery and combat ability with the power to use magic. This saves the gamer from the usual phenomenon of having the adventuring party a mix of stalwarts and boat anchors at both low and high levels of development. *BOCF* allows the gamer much more freedom to select the initial characteristics of the party members than I am accustomed to seeing in fantasy CRPGs. You will want to spend

a fair amount of time considering your options and assembling a strong party before starting serious adventuring. In fact it is vital that you do so: *BOCF* requires you to finish the game with the same set of characters you start with.

Exploring in *BOCF* is much more complex than in most CRPGs. You will encounter countless locked doors, which will need to be picked or forced open by the appropriate characters if you haven't got a key. Not everything you need will be visible. You will have to use the Search option in places where you suspect important items are concealed. Interaction with non-player characters goes far beyond the usual fight-or-conscript options. The party members can do anything from talking with a creature they have encountered to trying to pick its pocket for valuables. However, these characteristics do make for fairly slow play—*BOCF* appears to be good for hours and hours of fun from more than just the size suggested by the five-disk distribution set.

Another feature I enjoyed was the maze design. Most fantasy game dungeons are essentially flat, with only single connections "up" and "down" to give three-dimensional character to them. In *BOCF*, on the other hand, the castle has a real three dimensional appearance with multiple passages up and down at every level. There are even "towers" to explore.

*Bane of the Cosmic Forge* will probably appeal most to those experienced in and having a taste for pen-and-paper role playing games such as *Dungeons and Dragons*. With its complex character and exploration systems, *BOCF* does a better job of capturing the intricacy and flavor of such games than most computer role-playing products. For those to whom such characteristics are paramount, *Bane of the Cosmic Forge* is a good buy. Those who demand first-rate graphics and snappy, undemanding play are well advised to look elsewhere.

## F-29 Retaliator

by Rob Hays

At about the time you read this, the U.S. Air Force is supposed to choose a replacement for the F-15 Eagle fighter. For many months, they have been testing two prototypes that take advantage of all of the advances made since the F-15 was designed in the late 1960's. Ocean Software's F-29 Retaliator allows you to fly one of these prototypes, the YF-22A, as well as the YF-29, an aircraft with bizarre-looking forward swept wings.

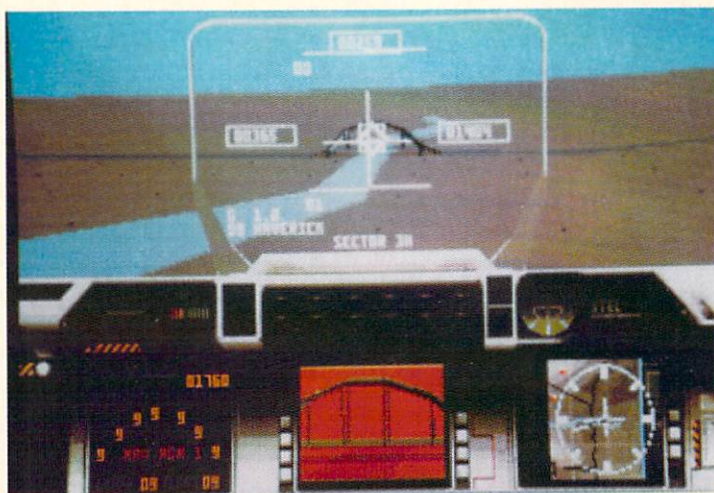
The F-29 Retaliator program allows you to fly almost 100 different missions taking place in Europe, the American desert, South Pacific, and Middle East. These missions range from air-to-air dogfights with Soviet MIG-29 fighters to precision bombing of a wide variety of ground and sea targets. Each mission can be flown with either plane, and the plane can be controlled with a joystick, the keyboard, or the mouse, switching between the three with a keypress.

You can choose any of five ranks for your pilot, with the lowest rank given an unlimited supply of fuel and weapons. The game will save a profile of your current pilot, who is awarded points and medals for completion and survival, as well as the top scores, on disk. At the end of each mission, whether successful or not, you are given the choice of updating the pilot data on the disk. If you crash, you can restart the mission without losing all of the points and medals you've accumulated.

These planes employ Stealth characteristics to help evade enemy radar, and Supercruise engines to allow sustained supersonic flight without using fuel-gobbling afterburners. The cockpits are the latest version of the glass-cockpit concept, with most of the information being presented to the pilot on three video screens instead of literally hundreds of dials, gauges and



switches. These three screens can be cycled through a total of nine different displays, which provide such information as maps, radar information, and weapons status. A Heads-up Display above the instrument panel makes critical information such as altitude and airspeed visible at all times. Using the function keys, you can change your direction of view, including views from outside the aircraft.



View of the Heads-up target display from inside the cockpit of the F-29.

The graphics are very good, maybe not state-of-the-art, but very quick. I especially liked the way the image from the missile is correctly shown on your cockpit display. As the missile closes in on a target, the image of the target swells until the missile hits, then goes blank. With actual images like this recently on television, everyone now knows what to expect from a simulation, and F-29 delivers.

the faster processor making no difference to game speed or control.

F-29 Retaliator is fine example of flight simulation done well, and it allows you a chance to fly the types of planes that will be used in the next century.

## Building a Multi-Joystick Adapter

by Blair Middleton

Have you ever wanted to include more than two of your friends in an arcade game on your Amiga? Have you thought that four people playing a game either against each other or the computer would be a lot of fun? Well, if you build this little four-player joystick adapter and have any of the supported software, then you too can experience multi-player games. This project enables you to connect two additional joysticks to your Amiga through the parallel port allowing some games to have four independent players, utilizing four different joysticks, involved in the action at the same time. All you need is a few inexpensive parts and a little free time to put it all together.

The two current joystick ports on your Amiga are labelled JOY1 and JOY2. These are standard DB-9 male connectors that interface your computer with either a joystick, light-pen or mouse. What you have to do is connect two more DB-9 fittings to the DB-25 female connector, which usually acts as your Amiga's parallel port; we will call these two additional joysticks JOY3 and JOY4. If you want to add only one additional joystick to your computer, you will only have to connect one-half of the circuit leading to only one of the male DB-9 connectors (JOY3).

It should be noted here that the various models of Amigas do not have the same parallel port pin-outs. The Amiga 1000 was built with a non-standard parallel port, while the Amiga 500

Everything in life is a series of compromises, and nothing shows this fact better than flight simulator software. Which is more important, accurate representations of flight characteristics, or ease of control? The view out the window, or the representation of radar data? Throw in the calculations required to keep track of altitude, airspeed, and hundreds of other details necessary to simulating flight, and you will see why every flight simulator has to compromise.

F-29 leans toward accurate flight and data representations at the sacrifice of pretty scenery. The landscapes tend to be angular, suddenly popping in and out of visual range. However, if you do a barrel roll in one of these aircraft, you find the nose dropping slightly as the wings lose lift, just as in a real plane. The audio effects are limited to engine noise, sounds of weapon firing, and hitting. There are no voices screaming in your ear to "Pull Up!" if you get too close to the ground.

A real key to survival in this game is understanding the ranges, uses, and limits of the nine different missiles available. For instance, if hounded by an enemy fighter on your tail, shoot one of the new rearward-firing Backwinder missiles. It locks onto the enemy's attack radar and closes in at over three times the speed of sound.

The manual is a 45 page booklet which describes the two aircraft, weapons, and your choice of missions. The programming credits seem to indicate the game was originally programmed on the Amiga and then ported to the Atari ST and IBM PC. This makes it hard to understand why features such as playing by modem were left out of the Amiga and ST versions.

Since the disk is copy-protected, the game must be played from the floppy. Disk access is relatively quick and painless, even for someone accustomed to the speed of a hard disk. The game behaves the same on a standard Amiga 500 and the new Amiga 3000,



and 2000 both have the same parallel port pin-outs. The pins that have to be connected between the DB-9's and the DB-25 are outlined as follows:

Port	JOY3	JOY4	Description
2	1		UP
3	2		DOWN
4	3		LEFT
5	4		RIGHT
6		1	UP
7		2	DOWN
8		3	LEFT
9		4	RIGHT
11		6	FIRE
13	6		FIRE
18		8	GROUND
19	8		GROUND

Using these connections will ensure trouble-free attachment of the extra joysticks to any model of the Amiga. This circuit does not use all the Amiga's parallel port pins for the extra two joysticks, and all the unused pins are to be left vacant. You should also note that when interfacing the Amiga's parallel port, pin #14 on the A500/2000 or pin #23 in the A1000, has +5 volts coming out of it. You must be careful that none of the pins or wires inside the DB connectors are touching the +5 volts or one another as you could run the possibility of "shorting out" your system by damaging one of the CIA chips (the 8520's).

The actual construction of this circuit is relatively simple. Figure 1 gives you the schematic of how the wires are laid out. The only change in the schematic diagram for the different Amiga models is that A500/2000 owners must

use a male DB-25 connector while A1000 owners must use the corresponding female connector. If you plan on just having the DB connectors attached by pieces of wire, then you should make the wires between the DB-25 and the DB-9 connectors anywhere from 12 to 14 inches long so they reach from behind your computer to the front for easy access. Ambitious project builders can put the whole thing in an experimental box and dress it up with decals listing the ports. This would make a sturdier arrangement, but I find that just keeping the connectors attached to each other by their wire-to-wire connection is good enough. If you want, you can wrap the wires up with electric tape to keep them from getting tangled.

This multi-joystick adapter is simple enough that anyone who has soldered two wires together can construct it with ease. Presently, there are not many games that support this

adapter cable, but that may change as more and more people obtain these devices. Software companies will respond to the gaming public if they feel that a multi-player feature will enhance the gameplay of their products, thus selling more units. I hope that by utilizing this four-player adapter and involving more players in your games, play will be more enjoyable for everyone.

•AC•

#### Currently Supported Games

- Gauntlet II by Mindscape Inc.
- Leatherneck and International Soccer by Microdeal/MichTron
- Projectyle by Electronic Arts.
- TV Sports Basketball by Cinemaware

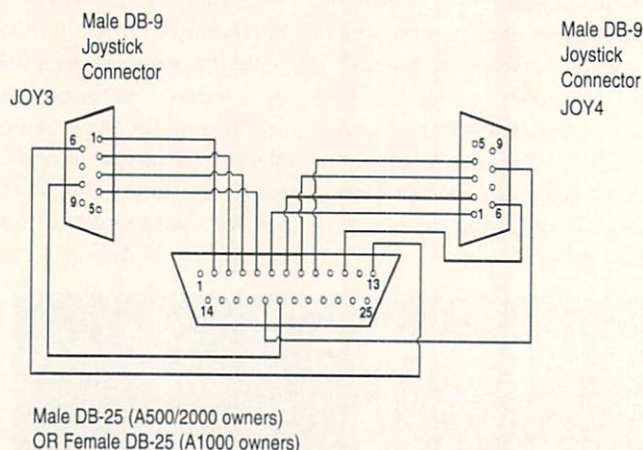
#### PARTS LIST

- 2 DB-9 Male RS #276-1537
- 1 DB-25 Male RS #276-1547 (for A500/2000 users)
- 1 DB-25 Female RS #276-1548 (for A1000 users)
- 6'-12' experimental wire
- Experimental enclosure (optional)
- RS #270-230

\*All parts available at your local Radio Shack store.

Please write to Blair Middleton c/o  
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Figure One: Multi-Joystick Extender



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# C NOTES

## From the C Group by Stephen Kemp

Programmers typically do too little documentation. I don't mean the documentation required by users of the program; rather I refer to documenting the internals of a program. It seems only natural that if we spend so much time developing intricate programs, we would wish to document the intricacies. But somehow, it never seems to work out that way.

With very little effort, C programmers can better document their programs for those that may inherit them. Internal documentation will also offer the same advantages to yourself (especially if you have a short memory like mine) when you return to a piece of code that was written many days past.

In previous articles, I have tried to encourage programmers to include comments with their code. This is an important task, which I cannot over-emphasize. Comment on any code that would not be readily obvious to another programmer. Never assume that someone looking at your code has the same skill level or intimate knowledge of the program. At best, you can assume that those inheriting your code will have limited experience in the C language.

The best practice is to comment intricate code in-line. Functions and procedures should be preceded by a block of comments before the code begins. Comments should include not only the statement logic that you are trying to accomplish, but also general notes regarding the objective and intended results of the function.

No matter how easy it is to include comments, most programmers just don't take the time to do them properly. More than once, I have crossed paths with a function that performs some complicated algorithm with few, if any, comments. Occasionally, there is one brilliant comment

that reads: `/* be careful when changing this */`; or `/* do the work */`; or the best of all, `/* ? */`.

While you attempt to get into the habit of including comments in your code, there are two other documenting techniques that you can practice. The first is to name variables and functions with meaningful names. This makes the code more readable and easier to understand.

---

Comments should include not only the statement logic that you are trying to accomplish, but also general notes regarding the objective and intended results of the function.

---

Have you ever looked at a function with variable names like: tx, pp, r, or df? Wouldn't it be clearer if you used names like: tax, prepaid, rollover, or diskfile?

Usually, the reason we programmers don't use meaningful names is that we hate to type. One shortcut many programmers use to avoid excessive typing is to abbreviate. Omitting a few vowels and other letters is fine, as long as the intent can still be determined. Another technique, with which you are probably familiar, is the use of phonetics. If you have ever passed time during rush hour traffic deciphering auto license plates, then you will know what I mean.



Another informal technique for internal documentation involves the use of macro substitution for defining data types. To do this, use the #define directive of C to develop new data type names from existing data types. For instance, it is not uncommon to have variables in C programs that simply indicate a state of TRUE or FALSE. These Boolean variables will usually be defined as short integers. With the following statement, these variables are still short integers, but it is possible to give a much more descriptive definition.

```
#define  BOOL      short
BOOL    done;
BOOL    changed;
BOOL    error;
```

If you encounter variables declared like those shown beneath the BOOL definition in a function, it will be much more obvious how they are intended to be used. These definitions will also help to remind you not to use one of these variables to hold some value other than those intended by the definition. There are few things more confusing than using one variable for everything.

Most of the C compilers that are available for the Amiga will provide a number of defined data types like the one shown above. Table One is a list of data types that are commonly defined for the Amiga. Of course, you can define these and many more if the header files accompanying your compiler are not complete.

**TABLE One**

**Amiga NamesC data types**

```
BOOLshort
USHORTunsigned short
ULONGunsigned long
BYTEchar
UBYTEunsigned char
WORDshort
COUNTshort
TEXTunsigned char
APTRunsigned char *
```

As you can see from this table, not only will these definitions improve the internal documentation included in your programs, but in many cases these definitions also conserve keystrokes. So this should serve as evidence that these techniques offer other advantages.

Now, I will admit that I don't always heed my own preaching. It isn't that I refuse to comment or document my code using one of the techniques, it is simply that sometimes I don't think about using them. Initially, learning to comment your code as you develop may seem tedious, but with a little practice, it can become second nature. If you and I continue to practice, one day we won't have to think about the effort.

•AC•

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# Message Logger

## A Multitasking Application

by Brian Zupke

As most of you know, one of the powerful features of the Amiga computer is its ability to do multitasking. This allows you to run multiple applications at the same time. Individual applications themselves can also benefit from multitasking, both in their design and use. Separating functions of an application into individual programs can greatly simplify the programming effort required. This is especially true for functions that are independent of others in an application. For example, in the commercial program WordPerfect, the print function is a separate program. Being such, the printing does not interfere with the use of the main program. If the print function had been a part of the main program, then either the user would have to wait for the printing to complete, or the programmer would have had to write the main program such that the print function is called very frequently and upon each call only a very small portion of the printing is performed.

Another benefit of multitasking within a single application is handling shared resources. When using WordPerfect, the printer is a shared resource in that you can print more than one document at a time. To prevent two documents from being sent to the printer simultaneously, the print function places each print "job" in a print queue, and prints them one at a time.

Having a shared resource is the problem I encountered within my logging program. I solved it by splitting it up into two programs.

I wanted to keep a log containing date- and time-stamped messages of events that occur while using my system. Some of the events would be generated when programs were run; others when I typed in a log command from the CLI. All of these messages would be placed into an ASCII file on my hard disk. This would give me a chronological history of the use of my machine. The first version of the log program simply combined the arguments of the log command (from the CLI) with the current date and time, appending them to the log file on disk.

This worked, but I quickly realized a potential problem with its use in a multitasking environment. If two copies of the Log program tried to add a message to the logfile at the same time, one would fail since the other would have a "lock" on the file (Figure 1). By splitting the logging application into several programs (i.e., make it multitasking), the problem is

corrected (Figure 2). The log file (shared resource) is only accessed by one program (Logger) that always stays in memory. To add a message to the log, a second program (Log) is executed which sends the log message to the first program which, in turn, writes that message to disk. In the case where two copies of the Log program try to add a message to the log file at the same time, both messages will be queued to Logger, which will process each message in the order they are received.

Logger is the main program that is always running in the background. It is invoked with "RUN logger," which I have added to my startup-sequence file so it is activated after each reboot. Logger simply waits for messages to be sent by the program Log. Once Logger receives a message, it processes the command contained within the message.

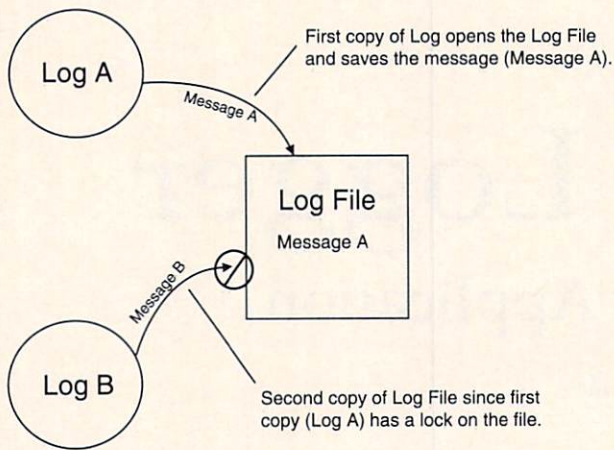
Log provides the user interface for Logger. It is invoked from the CLI and can be typed in or be part of a script file (such as the startup-sequence). Since the Log program does not access the log file directly, multiple copies of the Log program can be running concurrently.

The commands and log messages are placed within a message structure and are passed between the Log and Logger programs using the Exec message system. This system provides the Amiga with a simple, yet very powerful mechanism for communication between tasks. It consists of ports, message structures, pointers, and function calls. Ports are destination points for data being sent from one task to another. The message structures contain the data being sent, but the message structure itself isn't actually sent to the receiving task. Instead, a pointer to the address of the message structure is sent. The receiving task then uses the pointer to examine the appropriate message. This method allows for very fast message transfer regardless of message size. The Exec library provides all of the necessary functions for using the message system. A complete discussion of these functions can be found in the Amiga ROM Kernel Exec library reference manual. The message structure for the Logger program contains the following information:

**Standard Header** — required to be the first element of any Exec message structure. It is used by the message functions to keep track of the messages in the system.



Figure One: Shared Resource Problem



**Log Command** — function that Logger is to perform:

**LOG\_MESSAGE** — causes Logger to extract the text from the message, add the current date and time, and write it to the log file on disk.

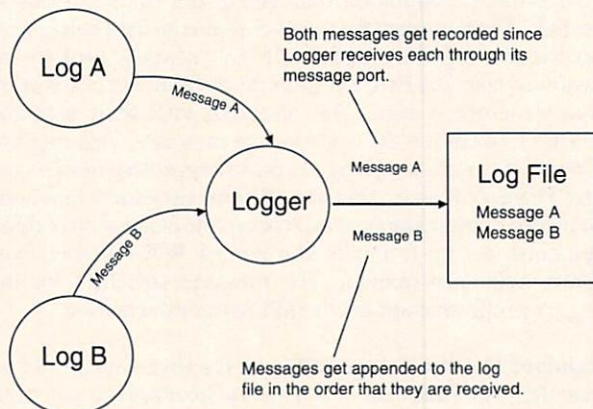
**GET\_STATUS** — causes the Logger to place the current statistics of number of messages received and number of failures into a reply message and sends the message to the program that sent the command.

**END\_PROGRAM** — causes the Logger program to terminate.

**Reply Mode** — method in which the Logger program is to reply to the original message:

**NO\_REPLY** — no reply is made and the message structure is de-allocated by Logger. This requires that Log does not try to access the data structure once it has sent the message to Logger, which must de-allocate the message structure when it has finished using it.

Figure Two: Shared Resource Solution



**QUICK\_REPLY** — a reply is sent to Log before the message is added to the log file. Log de-allocates the message structure once the reply is received.

**WAIT\_REPLY** — a reply is sent to Log only AFTER the message has been written to the log file. Log de-allocates the message structure once the reply is received.

**Log text** — text of the actual log message (when command is LOG\_MESSAGE).

**Response** — pass/fail status of the operation (ignored when NO\_REPLY response mode is specified):

**PROCESSED** — The Logger program completed the requested operation successfully.

**WRITE\_FAIL** — The Logger program was unable to add the requested log message to the file.

**SHUT\_DOWN** — The Logger program is in the process of shutting down (it received the END\_PROGRAM command) so was unable to add the requested log message to the file.

**Number of Log Requests** — The number of log requests that the Logger program has received. This is set in response to the GET\_STATUS command.

**Number of Log Errors?** — The number of failures when attempting to add a message to the log. This is set in response to the GET\_STATUS command.

## ENTERING THE PROGRAMS

The programs were created using Manx Aztec C version 5.0. Using your favorite text editor, enter the files shown and save them separately under the following names:

**Listing 1** Log.h Include file used by all log programs.

**Listing 2** Logger.c Main program that runs in background.

**Listing 3** Log.c Used to enter messages into the log (WAIT\_REPLY).

**Listing 4** Qlog.c Also used to enter messages into the log, except performs a quick-return (NO\_REPLY).

**Listing 5** Logtest.c Test program demonstrating the WAIT\_REPLY mode. Generates 50 log messages.

**Listing 6** Qlogtest.c Test program demonstrating the NO\_REPLY mode. Generates a specified number of log messages.

**Listing 7** Port.c Common functions to create and delete a message port..

Compile all of the '.c' programs:



```
cc <program>
```

Link the executable programs as follows:

```
ln Logger Port -lc
ln Log Port -lc
ln Qlog -lc
ln LogTest Port -lc
ln QlogTest -lc
```

Place Logger, Log, and Qlog in a directory that is included in your search path (e.g., sys:c, sys:bin, etc.). The search path can be changed with the +path? command.

### STARTING UP LOGGER

Once you've compiled and linked Logger, activate it by entering:

```
RUN >NIL: Logger [<log_file_name>]
```

where <log\_file\_name> is the path and file to be created or appended for logging messages. The default name is defined in Logger.c as "sys:s/Activity.log". Unless you see an error message, the Logger program should now be running. To verify this, enter the CLI command "status." All the current processes will be listed and Logger should be one of them. The Logger program will not load successfully if a copy is already running, the specified or default log file could not be opened, or if a message port couldn't be opened. When Logger is activated, it adds a message to the log file specified by the variable StartupText in Logger.c, which is set to "Logger started." If you activate Logger from your startup sequence, you'll have a complete history of when your computer was rebooted. After Logger has been activated, all subsequent user-interactions are handled by Log, Qlog, or other programs that will be sending messages to Logger.

### USING LOG AND QLOG

Log and Qlog are two versions of a log entry program that accept a line of text or a special command from the CLI and passes the information on to Logger. The difference between the two programs is that Log requires Logger to make a reply where Qlog does not (Qlog is short for Quick Log). This means that it will take Log more time to complete than Qlog, but Log also can report on the results of the message processing by Logger whereas Qlog cannot. The sequence that occurs when a message is added to the log file using Log is shown in Figure 3. The sequence for Qlog is shown in Figure 4.

Three functions can be performed using the Log program. Text messages can be added to the log file by entering:

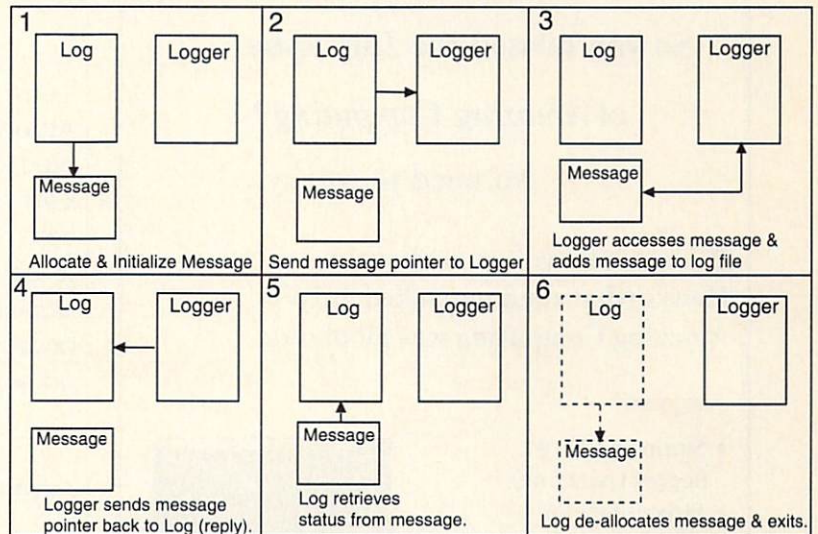
```
Log <text>
```

The Log program will report the results of the log message processing.

The status of the Logger can be obtained by entering:

```
Log @
```

Figure Three: Log Message Passing Sequence



The response will show the number of message requests sent to the Logger since it was activated and the number of failures that have occurred.

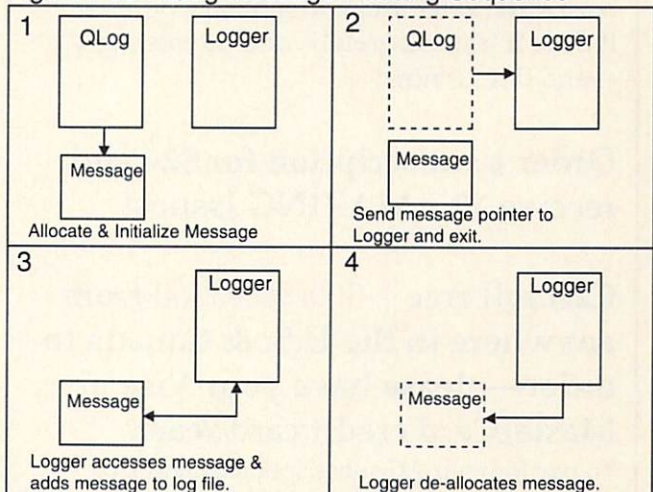
The Logger program can be terminated by entering:

```
Log !
```

This will also cause a shut-down message to be added to the log before Logger terminates.

Qlog can also be used to add messages to the log or to shut down the Logger program. It uses the same commands as Log. Since it does not wait for a reply, however, it cannot obtain the Logger status. If you enter: "Qlog @," the command will simply be ignored.

Figure Four: Qlog Message Passing Sequence





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```

char LogText[MAXMSG];    /* Log message text. */
int Response;            /* Log response (see below) */
int N_Log_Req;           /* Number of log requests */
int N_Log_Errors;        /* Number of log errors */
};

/* Log Commands */

#define LOG_MESSAGE 0    /* Add a message to log */
#define GET_STATUS 1    /* Return logging status */
#define END_PROGRAM 2    /* End program */

/* Reply Modes */

#define NO_REPLY 0      /* Do not reply to message */
#define QUICK_REPLY 1   /* Reply once Message received */
#define WAIT_REPLY 2    /* Reply after completed */

/* Response Flags */

#define PROCESSED 0     /* Completed operation ok */
#define WRITE_FAIL 1    /* Couldn't write to log */
#define SHUT_DOWN 2     /* Failed - Shutting down */

/* Program return codes */

#define EXIT_OK 1
#define EXIT_ERROR 20

/* Prototypes */

BOOL Add_To_Log(char *LogEntry, char *FileName);
struct MsgPort *Create_Port(char *name, int pri);
void Delete_Port(struct MsgPort *MP);
void LogProcess(struct MsgPort *IP, char *FN);

```

#### LISTING TWO: Logger.c

```

/*-----
|
|           System Logger
|
|           Copyright © 1990 by Brian Zupke
|
| This program creates and maintains a text log file on
| disk containing date/time stamped messages created by
| the log or similar program. Log messages are
| transmitted via the Exec message system to the global
| port name specified in the "log.h" file. Three
| different commands can be sent to this program by
| setting the LogMessage->Command field to:
|
| LOG_MESSAGE - adds accompanying text to log file
| GET_STATUS  - returns number of log requests and
|               number of failures in:
|               LogMessage->N_Log_Req and
|               LogMessage->N_Log_Errors.
| END_PROGRAM - causes this program to shut down.
|               Once this command is received, any
|               subsequent commands will be rejected
|               and the Log message port will be
|               removed from the system.
|
| There are also three types of replies possible. This
| is specified by the LogMessage->Reply field:
|
| NO_REPLY - No reply will be made and the
|            memory containing the sender's
|            original message is freed to the
|            system. The GET_STATUS command is
|            invalid in this mode since no reply
|            is made. The Sender must not
|            try to access the message that was
|            sent as an error will result.
| QUICK_REPLY - Causes a reply message to be sent as
|               soon as log message received. The
|               sender will not know if the
|               LOG_MESSAGE operation completed
|               successfully unless the GET_STATUS
|               command is subsequently sent.
| WAIT_REPLY - Causes a reply message to be sent
|               after the LOG_MESSAGE operation has
|               completed/failed. Sender will know
|               result of operation.
|
| When Logger is executed, it repeatedly waits for log
| messages to arrive and then processes them accordingly.
| The program is not terminated until the END_PROGRAM
| command is received. To start the program, from

```

```

| the CLI, enter:
|
| RUN_LOGGER <filename>
|
| where 'filename' is an optional name of a file to add
| log messages to. If no name is entered, then the
| default name (LogFileName) is used. The program will
| not start if it cannot open (or create) the specified
| file or if the input message port cannot be opened.
|-----*/

#include "Log.h"

/*-----
|
|           Log Entry Format
|
| NOTMFORMAT - Format when time not available
| TIMEFORMAT - Regular format with time
|-----*/

#define NOTMFORMAT "          : %s\n"
#define TIMEFORMAT "%02.2d/%02.2d/%02.2d %02.2d:%02.2d:%02.2d : %s\n"

/*-----
|
|           Global variables
|-----*/

char *LogFileName = "sys:s/Activity.log";
char *PortName = LOG_PORT_NAME;
char *ShutDownText = "Logger shut down.";
char *StartupText = "Logger started.";

/*-----
|
|           Main program
|-----*/

void main(int argc, char *argv[])
{
    int exit_code;
    struct MsgPort *FP;
    struct MsgPort *InputPort;

    exit_code = EXIT_OK;

    /* Change default file name if specified */

    if (argc > 1)
    {
        LogFileName = argv[1];
    }

    /* Make sure input port doesn't already exist. If it
    does, there's a good chance that Logger is already
    running. */

    FP = FindPort(PortName);
    if (FP != NULL)
    {
        printf("\nPort already exists - Log might be running.\n\n");
        exit_code = EXIT_ERROR;
    }
    else
    {
        /* Create Input Port */

        InputPort = Create_Port(PortName, LOG_PORT_PRI);
        if (InputPort == NULL)
        {
            printf("\nCouldn't open a port\n\n");
            exit_code = EXIT_ERROR;
        }
        else
        {
            /* Locate Log File */

            if (Add_To_Log(StartupText, LogFileName))
            {
                LogProcess(InputPort, LogFileName);
                Add_To_Log(ShutDownText, LogFileName);
            }
            else
            {
                printf("\nCan't create logfile!!!\n\n");
                exit_code = EXIT_ERROR;
            }
        }

        /* Delete Port from System */
    }
}

```



```

Delete_Port(InputPort);
}
}
exit(exit_code);
}

/*-----
Log Process
This routine is the heart of the logger program. It
repeatedly waits for and processes log messages until an
END_PROGRAM command is received.
-----*/

void LogProcess(struct MsgPort *IP, char *FN)
{
    BOOL Continue;
    struct LogMessage *LM;
    int LogErrors;
    int LogRequests;
    char Text[MAXMSG];

    LogErrors = 0;
    LogRequests = 0;

    /* Add Port to Global list */
    AddPort(IP);

    /* Wait for Log Messages */

    Continue = TRUE;
    while (Continue)
    {
        WaitPort(IP);
        if ( (LM = (struct LogMessage *)GetMsg(IP)) != NULL)
        {
            LogRequests++;
            switch(LM->Command)
            {
                case LOG_MESSAGE: /* Log a message */

                    if (LM->Reply == QUICK_REPLY)
                    {
                        /* Copy text into local area before replying */

                        strncpy(Text, LM->LogText, MAXMSG);
                        ReplyMsg((struct Message *)LM);
                        LM = NULL;

                        /* Update LogErrors count if not added to log */

                        if (!Add_To_Log(Text, FN)) LogErrors++;
                    }
                    else
                    {
                        /* Add message to log, set response */

                        if (Add_To_Log(LM->LogText, FN))
                        {
                            LM->Response = PROCESSED;
                        }
                        else
                        {
                            LM->Response = WRITE_FAIL;
                            LogErrors++;
                        }
                    }
                    break;

                case GET_STATUS: /* Return Log Status */

                    LM->N_Log_Req = LogRequests;
                    LM->N_Log_Errors = LogErrors;
                    LM->Response = PROCESSED;
                    break;

                case END_PROGRAM: /* End Log Program */

                    Continue = FALSE;
                    LM->Response = PROCESSED;
                    break;
            }

            /* Message already replied to if QUICK_REPLY specified */

            if (LM != NULL)
            {

```

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```

/* Free memory if NO_REPLY specified, otherwise Reply */

if (LM->Reply == NO_REPLY)
{
    FreeMem(LM, sizeof(struct LogMessage));
}
else
{
    ReplyMsg((struct Message *)LM);
}
}

/* Remove port from Global list */
RemPort(IP);

/* Process any additional messages */
while ((LM = (struct LogMessage *)GetMsg(IP)) != NULL)
{
    LM->Response = SHUT_DOWN;

    /* Free memory if NO_REPLY specified, otherwise Reply */

    if (LM->Reply == NO_REPLY)
    {
        FreeMem(LM, sizeof(struct LogMessage));
    }
    else
    {
        ReplyMsg((struct Message *)LM);
    }
}

/*-----
Add To Log
-----*/

```



```

| This routine performs the writing of the messages to the
| log file. It will return an error if unable to open the
| file or if write to file failed. The current date and
| time are pre-fixed to the log message before it is
| written to the file.
+-----*/

```

```

BOOL Add_To_Log(char *LogEntry, char *FileName)
{

```

```

    time_t    clocktime;
    struct tm  *CTime;
    int        error;
    FILE       *logfile;
    short      Month;
    BOOL       Written;

    /* Open the log file in the 'append' mode */

    logfile = fopen( FileName, "a" );
    if ( logfile == NULL )
    {
        Written = FALSE;
    }
    else
    {
        /* Get time. If not available print notime format */
        time( &clocktime );
        if ( clocktime == -1 )
        {
            error = fprintf( logfile, NOTMFORMAT, LogEntry );
        }
        else
        {
            CTime = localtime( &clocktime );
            if ( CTime == 0 )
            {
                error = fprintf( logfile, NOTMFORMAT, LogEntry );
            }
            else
            {
                /* Print date & time plus page number */

                Month = CTime->tm_mon + 1;
                error = fprintf( logfile, TIMEFORMAT, Month,
                                CTime->tm_mday, CTime->tm_year,
                                CTime->tm_hour, CTime->tm_min,
                                CTime->tm_sec, LogEntry );
            }
        }
        if ( error < 0 ) Written = FALSE;
        else Written = TRUE;
        fclose( logfile );
    }
    return(Written);
}

```

LISTING THREE: Log.c

```

+-----*/
|
|           Activity Logging Utility
|
|           Copyright © 1990 by Brian Zupke
|
| This program queues a log message or command to the
| logger program. The following commands are available:
|
|   log text      - adds a message to the log
|   log @         - requests status of log
|   log !         - shuts down logger program
|
| This version of the log command uses the WAIT_REPLY
| command mode. This means that a reply is not made until
| after a write to the log file is attempted.
+-----*/
#include "Log.h"

#define MAXCHAR 500 /* max characters to read/process */

char *PortName = LOG_PORT_NAME;

void main(int argc, char *argv[])
{
    int  argc;
    char *argv[];

```

```

{
    int        exit_code;
    struct MsgPort *LogPort;
    struct MsgPort *ReplyPort;
    struct LogMessage *LM;
    char        LogEntry[ MAXCHAR ];
    int         LogIndex;
    int         NextArg;
    char        *strptr;
    BOOL        Inactive;

    exit_code = EXIT_OK;

    /* Output log format if no text entered */

    if ( argc<2 )
    {
        printf("\n FORMAT:  %s text... (log message)", argv[0]);
        printf("\n          %s @ (get status)", argv[0]);
        printf("\n          %s ! (shutdown)\n", argv[0]);
    }
    else
    {
        /* Create string from arguments */

        LogIndex = 0;
        for ( NextArg=1 ; NextArg < argc ; NextArg++ )
        {
            strptr = strcpy(&LogEntry[LogIndex],argv[NextArg]);
            LogIndex += strlen(argv[NextArg]);
            LogEntry[LogIndex++] = ' ';
        }
        /* end for */

        LogEntry[LogIndex] = '\0'; /* Add NULL */

        /* Create a reply port */

        ReplyPort = Create_Port(NULL, LOG_PORT_PRI);
        if (ReplyPort == NULL)
        {
            printf("Couldn't create reply port!\n");
            exit_code = EXIT_ERROR;
        }
        else
        {
            /* Create message to send to logger */

            LM = (struct LogMessage *)
                AllocMem(sizeof(struct LogMessage),
                        MEMF_CLEAR | MEMF_PUBLIC);
            if (LM == NULL)
            {
                printf("No memory available!!!!\n");
                exit_code = EXIT_ERROR;
            }
            else
            {
                /* Prepare and send a message */

                LM->Header.mn_ReplyPort = ReplyPort;
                LM->Header.mn_Length =
                    (UWORD)sizeof(struct LogMessage);

                /* Select command based on first parameter */

                switch (LogEntry[0])
                {
                    case '@':
                        LM->Command = GET_STATUS;
                        break;
                    case '!':
                        LM->Command = END_PROGRAM;
                        break;
                    default:
                        LM->Command = LOG_MESSAGE;
                        strcpy(LM->LogText,LogEntry);
                }
                LM->Reply = WAIT_REPLY;

                /* Make sure logger is active (find it's port) */

                Inactive = FALSE;
                Forbid();
                LogPort = FindPort(PortName);
                if (LogPort != NULL)
                {

```



```

        PutMsg(LogPort, (struct Message *)LM);
    }
else
{
    Inactive = TRUE;
}
Permit();

if (Inactive)
{
    printf("Can't add message - logger not enabled!\n");
    exit_code = EXIT_ERROR;
}
else
{
    /* Wait for a reply */

    WaitPort(ReplyPort);
    while ((LM = (struct LogMessage *)GetMsg(ReplyPort))
    == NULL);

    /* Output results based on command sent */

    switch (LogEntry[0])
    {
        case '@':
            printf("Requests: %ld. Errors: %ld\n",
                LM->N_Log_Req, LM->N_Log_Errors);
            break;
        case '!':
            if (LM->Response == PROCESSED)
            {
                printf("Logger shutting down.\n");
            }
            else
            {
                printf("Can't Shut down!!!\n");
                exit_code = EXIT_ERROR;
            }
            break;
        default:
            switch (LM->Response)
            {
                case PROCESSED:
                    printf("Message added OK.\n");
                    break;
                case WRITE_FAIL:
                    printf("Write Fail: Not added!\n");
                    exit_code = EXIT_ERROR;
                    break;
                case SHUT_DOWN:
                    printf("Shut-Down: Not added!\n");
                    exit_code = EXIT_ERROR;
                    break;
                default:
                    printf("Unknown response: %ld\n",
                        LM->Response);
                    exit_code = EXIT_ERROR;
            }
            }
        FreeMem(LM, sizeof(struct LogMessage));
        Delete_Port(ReplyPort);
    }
} /* end 'if created reply port' */
exit(exit_code);
}

```

#### LISTING FOUR: Qlog.c

```

/*-----
Quick Log Utility

Copyright © 1990 by Brian Zupke

This program queues a log message or command to the
logger program. The following commands are available:

qlog text          - adds a message to the log
qlog !             - shuts down logger program

This version of the log command uses the NO_REPLY
command mode. This means that no reply is made and the
logger program must free up the message.
*/

#include "Log.h"

```

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```

#define MAXCHAR 500 /* max characters to read/process */

char *PortName = LOG_PORT_NAME;

void main(int argc, char *argv[])
{
    int    exit_code;
    BOOL   Inactive;
    struct MsgPort *LogPort;
    struct LogMessage *LM;
    char   LogEntry[ MAXCHAR ];
    int    LogIndex;
    int    NextArg;
    char   *strptr;

    exit_code = EXIT_OK;

    /* Output log format if no text entered */

    if (argc < 2)
    {
        printf("\n FORMAT: %s text...\n\n", argv[0]);
    }
    else
    {
        /* Create string from arguments */

        LogIndex = 0;
        for (NextArg=1; NextArg < argc; NextArg++)
        {
            strptr = strcpy(&LogEntry[LogIndex], argv[NextArg]);
            LogIndex += strlen(argv[NextArg]);
            LogEntry[LogIndex++] = ' ';
        } /* end for */

        LogEntry[LogIndex] = '\0'; /* Add NULL */

        /* Create message to send to logger */
    }
}

```



```

LM = (struct LogMessage *)
    AllocMem(sizeof(struct LogMessage),
MEMF_CLEAR | MEMF_PUBLIC);
if (LM == NULL)
{
    printf("No memory available!!!!\n");
    exit_code = EXIT_ERROR;
}
else
{
    /* Prepare and send a message */

    LM->Header.mn_Length =
        (UWORD)sizeof(struct LogMessage);

    /* Select command based on first parameter */

    switch (LogEntry[0])
    {
        case '!':
            LM->Command = END_PROGRAM;
            break;
        default:
            LM->Command = LOG_MESSAGE;
            strcpy(LM->LogText, LogEntry);
    }
    LM->Reply = NO_REPLY;

    /* Make sure logger is active (find it's port) */

    Inactive = FALSE;
    Forbid();
    LogPort = FindPort(PortName);
    if (LogPort != NULL)
    {
        PutMsg(LogPort, (struct Message *)LM);
    }
    else
    {
        Inactive = TRUE;
    }
    Permit();
    if (Inactive)
    {
        printf("Can't add message - logger not enabled!\n");
        exit_code = EXIT_ERROR;
    }
    /* end 'if memory available' */
}
exit(exit_code);

```

#### LISTING FIVE: Logtest.c

```

/*-----+-----+
|                                     |
|               Log Test             |
|                                     |
|               Copyright © 1990 by Brian Zupke |
|                                     |
| The format for this command is 'logtest <name>'. This |
| causes 50 messages containing the text 'name' (default |
| is 'LogTest') to be sent to the log in the WAIT_REPLY |
| mode. |
+-----+-----*/
#include "Log.h"

char *PortName = LOG_PORT_NAME;

void main(int argc, char *argv[])
{
    BOOL    Inactive;
    struct  MsgPort  *LogPort;
    struct  MsgPort  *ReplyPort;
    struct  LogMessage  *LM;
    char    *LogName;
    int     NumberLogs;
    int     x;

    NumberLogs = 50;
    LogName = "LogTest";
    if (argc > 1)
    {
        LogName = argv[1];
    }

    /* Create a reply port */

```

```

ReplyPort = Create_Port(NULL, LOG_PORT_PRI);
if (ReplyPort == NULL)
{
    printf("Couldn't create reply port!\n");
}
else
{
    /* Create message to send to logger */

    LM = (struct LogMessage *)
        AllocMem(sizeof(struct LogMessage),
MEMF_CLEAR | MEMF_PUBLIC);
    if (LM == NULL)
    {
        printf("No memory available!!!!\n");
    }
    else
    {
        for (x = 0; x < NumberLogs; x++)
        {
            /* Set up and send log message */

            LM->Header.mn_ReplyPort = ReplyPort;
            LM->Header.mn_Length =
                (UWORD)sizeof(struct LogMessage);
            LM->Command = LOG_MESSAGE;
            sprintf(LM->LogText, "%s msg %ld", LogName, x);
            LM->Reply = WAIT_REPLY;

            /* Make sure logger is active */

            Inactive = FALSE;
            Forbid();
            LogPort = FindPort(PortName);
            if (LogPort != NULL)
            {
                PutMsg(LogPort, (struct Message *)LM);
            }
            else
            {
                Inactive = TRUE;
            }
            Permit();
            if (Inactive)
            {
                printf("Can't add - logger not enabled!\n");
            }
            else
            {
                /* Wait for a reply */

                WaitPort(ReplyPort);
                while ((LM = (struct LogMessage *)
                    GetMsg(ReplyPort)) == NULL);
                switch (LM->Response)
                {
                    case PROCESSED:
                        printf("%s Msg added ok.\n", LogName);
                        break;
                    case WRITE_FAIL:
                        printf("%s Fail: Not added!\n", LogName);
                        break;
                    case SHUT_DOWN:
                        printf("Shutdown: %s not added!\n",
                            LogName);
                        break;
                    default:
                        printf("Unknown response: %ld\n",
                            LM->Response);
                }
            }
        }
        /* end for */
        FreeMem(LM, sizeof(struct LogMessage));
    }
    Delete_Port(ReplyPort);
}
}

```

#### LISTING SIX: Qlogtest.c

```

/*-----+-----+
|                                     |
|               Quick Log Test         |
|                                     |
|               Copyright © 1990 by Brian Zupke |
|                                     |
| The format for this tewst command is 'qlogtest <n>'. |
| This Causes n (default is 10) messages to be sent to the |

```



```

| log in the NO_REPLY mode.
+-----*/

#include "Log.h"

char *PortName = LOG_PORT_NAME;

void main(int argc, char *argv[])
{
    BOOL Inactive;
    struct MsgPort *LogPort;
    struct LogMessage *LM;
    int NumberLogs;
    int x;

    NumberLogs = 10;
    if (argc > 1)
    {
        sscanf(argv[1], "%ld", &NumberLogs);
        if (NumberLogs <= 0) NumberLogs = 10;
    }
    for (x=0; x<NumberLogs; x++)
    {
        /* Create message to send to logger */

        LM = (struct LogMessage *)
            AllocMem(sizeof(struct LogMessage),
                MEMF_CLEAR | MEMF_PUBLIC);
        if (LM == NULL)
        {
            printf("No memory available!!!!\n");
        }
        else
        {
            LM->Header.mn_Length =
                (UWORD)sizeof(struct LogMessage);
            LM->Command = LOG_MESSAGE;
            sprintf(LM->LogText, "Quick log message %ld", x);
            LM->Reply = NO_REPLY;

            /* Make sure logger is active (find it's port) */

            Inactive = FALSE;
            Forbid();
            LogPort = FindPort(PortName);
            if (LogPort != NULL)
            {
                PutMsg(LogPort, (struct Message *)LM);
            }
            else
            {
                Inactive = TRUE;
            }
            Permit();
            if (Inactive)
            {
                printf("Can't add message - logger not enabled!\n");
            }
        } /* end 'memory available' */
    } /* end 'for' */
}

```

#### LISTING SEVEN: Port.c

```

/*-----+
| Create Port
|
| This routine creates a message port with a task signal
| connected.
+-----*/

#include <exec/exec.h>
#include <functions.h>

struct MsgPort *Create_Port(char *name, int pri)
{
    struct MsgPort *MP;
    int Signal;

    Signal = AllocSignal(-1);
    if (Signal < 0)
    {
        MP = NULL;
    }
    else
    {
        MP = (struct MsgPort *)
            AllocMem(sizeof(struct MsgPort),
                MEMF_CLEAR | MEMF_PUBLIC);
    }
}

```

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```

if (MP == NULL)
{
    FreeSignal(Signal);
}
else
{
    MP->mp_Node.ln_Name = name;
    MP->mp_Node.ln_Pri = pri;
    MP->mp_Node.ln_Type = NT_MSGPORT;

    MP->mp_Flags = PA_SIGNAL;
    MP->mp_SigBit = Signal;
    MP->mp_SigTask = FindTask(NULL);
    NewList(&(MP->mp_MsgList));
}

return(MP);
}

/*-----+
| Delete Port
|
| This routine frees the memory associated with a port
| and frees up the task signal used for it.
+-----*/

void Delete_Port(struct MsgPort *MP)
{
    if (MP != NULL)
    {
        FreeSignal((long)MP->mp_SigBit);
        FreeMem(MP, sizeof(struct MsgPort));
    }
}

```

•AC•



# ACS

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"Professional Page 2.0", a review of a complete and truly professional desktop publishing package by Rick Broida

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"PageStream", another entry in the word processing/desktop publishing software line, by John Steiner  
Also, extensive Summer CES coverage!



# Power Basic: The Pre-processor

*by Jonathan E. Horne*

The BASIC programming language is often criticized for being cumbersome, impractical, and slow. It is scarred with a reputation of producing unstructured spaghetti-like code. Perhaps that's the way BASIC used to be, but not anymore. With the advent of BASIC compilers like HiSoft BASIC, AC/BASIC, and GFA BASIC, plus the development of new structured programming techniques, BASIC can produce code that is as fast and organized as its C or Modula 2 counterparts.

One advantage that these other languages have always had over BASIC is that they use something called a pre-processor. A pre-processor is a program that reads through source code and prepares it for compilation by the compiler. When this preparation is done, many useful tasks are accomplished. Perhaps the most important task is definition replacement.

Definition replacement works in much the same way the search and replace functions of a word processor do. The pre-processor is given a piece of text and told to replace every occurrence of that text in a file with another piece of text. For example, if you instructed the pre-processor to replace the word *Hi* with the phrase *Hello world*, the sentence *Hi, my name is John* would become *Hello world, my name is John*. In C language, the commands might look like this:

```
#define Hi "Hello World!"

main()
{
    printf("%s my name is John\n",Hi);
}
```

This program would produce output that says *Hello World!* my name is John. The text *Hi* was replaced with a literal string *"Hello World!"*.

At the end of this article, there is a BASIC source code listing for a simple definition replacement pre-processor. Type it in and compile it according to your compiler's directions. If you do not have a compiler, you can use the program with the Amiga Basic interpreter, but it will run significantly slower. The pre-processor works in much the same way a C or Assembly preprocessor would. At the top of your program, enter the word *'define* (including the apostrophe) followed by a symbol (a piece of text that you want replaced), and a value (text you want to replace the symbol with). For example, the following definition would tell the preprocessor that you want to replace every occurrence of the word *pet* in your program with the phrase *billy-goat*.

```
'define pet billy-goat
```

When you run the pre-processor, the program will ask you to enter the name of a BASIC source code file. Type in the name of your BASIC program. Make sure that your program was saved in ASCII format! If you created your program with a text editor, you should have no problem. If you created your program using the Amiga Basic interpreter, make sure you save the program using the *.a* option. For example, you could save your program by typing *SAVE "myprog".a* in the interpreter. After entering the name of your program the pre-processor will begin working. It will tell you how many definitions it found. When it is done, you will have a new file on your disk with the same name



as the original plus the extension .out at the end. In this file, you will find that all of the definitions in the original program have replaced their corresponding symbols.

If your BASIC program was named project, you would run the pre-processor, enter the name project for the source code file name, and an output file titled project.out would be created. If your original program looked like this:

```
'define motto "A penny saved is a penny earned."
PRINT motto
```

then the output of the pre-processor would look like this:

```
'define motto "A penny saved is a penny earned."
PRINT "A penny saved is a penny earned."
```

So just how useful is definition replacement? The longer the program you write, the more useful you will find definition replacement to be. For example, let's say you wanted to write a program that converted angles measured in degrees to radians. The formula to do this is  $\text{RadAngle} = 2(\text{PI})(\text{DegAngle})$ . You could write:

```
INPUT "Angle in degrees:",a
PRINT "The angle in rads is"; a*2*3.141592/180
```

or, you could have used

```
'define DegToRad 2*3.141592/180

INPUT "Angle in degrees:",a
PRINT "The angle in rads is"; a * DegToRad
```

This is an example of clarity. Using definition replacement makes your program much easier to understand and modify. Also, there is less chance of entering the formula wrong if you only have to type it once. Besides, it is much easier to remember the name DegToRad than it is to remember the formula itself.

Definition replacement can also be used in more exotic ways. For example, you could personalize the BASIC language to suit your own style. Would you recognize the following program?

```
'define DisplayMessage PRINT "Hello World!"
'define FlashScreen BEEP
'define show PRINT
'define instructions "Hit a key to continue!"
'define WaitForKey WHILE INKEY$<>"":WEND
'define GoAway END

DisplayMessage
FlashScreen
show instructions
FlashScreen
WaitForKey
GoAway
```

After being run through the pre-processor, the same program would look like this:

```
'define DisplayMessage PRINT "Hello World!"
'define FlashScreen BEEP
'define show PRINT
'define instructions "Hit a key to continue!"
'define WaitForKey WHILE INKEY$<>"":WEND
'define GoAway END

PRINT "Hello World!"
BEEP
PRINT "Hit a key to continue!"
BEEP
WHILE INKEY$<>"":WEND
END
```

The next time you look at source code listings for a language such as C or Assembly, pay attention to the number of definitions you find. By studying these examples, you may find new ways to use your BASIC pre-processor. If you are of the adventurous type, you could expand the program included in this article to perform other functions handled by commercial pre-processors such as allowing for include files and selective compilation. Maybe someday, a pre-processor will be automatically included with BASIC compilers as it is with other languages.

## PROC.BAS

```
'A BASIC Pre-processor
'By Jonathan Horne - November 1990

'Initialize variables
ext$ = ".out" 'extension to add to source code
filename 'filename
cmd$ = "'define" 'the define statement to search
for
maxdefs% = 500 'maximum number of definitions
allowed
source$ = "" 'name of source code input file

'Zero counters
no.defs% = 0 'number of definitions found
reps% = 0 'number of replacements made
no.lines% = 0 'number of lines in the source
code
errors% = 0 'Number of errors encountered in
source code

'Dimension Arrays to maximum number of definitions allowed
DIM symbol$(maxdefs%),value$(maxdefs%)

'Read in the filename for the basic source code
reenter:
CLS
LINE INPUT "BASIC source code path/filename:",source$
IF source$ = "" THEN reenter
PRINT

'Look for define statements and determine symbols and values.
'When a "'define" is encountered, specified in the variable cmd$,
'the text between the spaces constitutes the symbol. All of the
text
'to the right of the second space becomes the value
'The format is: 'define xxxxxxxx xxxxxxxxxxxxxxxxxxxxxxxx
'
' First Space Second Space

OPEN source$ FOR INPUT AS 1

'read through the ENTIRE file looking for definitions (they may be
anywhere!)
WHILE NOT EOF(1)
```



```

'read one line from the file
  LINE INPUT #1,info$
  no.lines% = no.lines% + 1

'see if this line begins with our "define" statement
  IF LEFT$(info$,LEN(cmd$)) = cmd$ THEN

'keep track of how many definitions were found
  no.defs% = no.defs% + 1

'determine the position of the spaces... cp1% is first, cp2% is
second
  cp1% = INSTR(info$,SPACES(1))
  cp2% = INSTR(cp1%+1,info$,SPACES(1))

'Check to see that there were at least 2 spaces
  IF (cp1% * cp2%) = 0 THEN
    errors% = errors% + 1
    PRINT " Error in line ";no.lines%
    PRINT "      ";info$
    PRINT
  END IF

'If there are no errors then assign:
'  symbol is the text between the first two spaces.
'  value is the text to the right of the second space (including
spaces)
  IF errors% = 0 THEN
    symbol$(no.defs%) = MID$(info$,cp1%+1,cp2% - cp1%-1)
    value$(no.defs%) = RIGHT$(info$,LEN(info$)-cp2%)
  END IF

  END IF
WEND
CLOSE #1

'If there were any errors, then stop and tell user
IF errors% > 0 THEN
  PRINT " There were ";errors%;" errors"
  PRINT " No output file was generated."
  PRINT
  PRINT " Hit any key to continue..."
  WHILE inkey$ = "" : WEND
  STOP
END IF

'Stop if there is nothing to be done
IF no.defs% = 0 THEN
  PRINT " No replacements to be made!"
  PRINT
  PRINT " Hit any key to continue..."
  WHILE inkey$ = "" : WEND
  STOP
END IF

'display our list of definitions
PRINT no.defs%;" definitions recognized..."
FOR i% = 1 TO no.defs%
  PRINT "      ";symbol$(i%), value$(i%)
NEXT i%

'Open our destination file
OPEN source$+ext$ FOR OUTPUT AS 2

'Write the new file with values replacing symbols
OPEN source$ FOR INPUT AS 1

'do this for the entire file
WHILE NOT EOF(1)

'read in one entire line
  LINE INPUT #1,info$

'if this is one of our "define" statements, write it as is without
'making any replacements.
  IF LEFT$(info$,LEN(cmd$)) = cmd$ THEN
    newinfo$ = info$
    GOTO nxt
  END IF

'repeat this for every definition
  FOR i% = 1 TO no.defs%

redo:

'If there are any symbols in this line, where are they?
  cp% = 0
  cp% = INSTR(info$,symbol$(i%))

```

```

'If there is one then make the replacement
  IF cp% > 0 THEN
    reps% = reps% + 1
    newinfo$ = LEFT$(info$,cp%-1) + value$(i%)
    lt% = LEN(info$) - cp% - LEN(symbol$(i%)) + 1
    newinfo$ = newinfo$ + RIGHT$(info$,lt%)

'otherwise write the line as it is
  ELSE
    newinfo$ = info$
  END IF

'If there was a symbol, then go back to the top and see if there
are any more
  info$ = newinfo$
  IF cp% > 0 THEN redo

  NEXT i%
nxt:

'write the new line to our output file
  PRINT #2,newinfo$

WEND
CLOSE #1
PRINT
PRINT reps%;" replacements made..."

'Close the new file we just created and exit
CLOSE #2
PRINT
PRINT " Hit any key to continue..."
WHILE inkey$ = "" : WEND
END

```

## SAMPLE

'A sample file demonstrating uses of the pre-processor  
'Jonathan Horne - November 1990

```

'define PI 3.141592

INPUT "Enter the radius of a circle: ",r
PRINT "The circumference is ";2*PI*r

'define car "Lamborghini"
'define show PRINT
'define bye END

show "My favorite automobile is a ";
show car

bye

```

## SAMPLE OUT

'A sample file demonstrating uses of the pre-processor  
'Jonathan Horne - November 1990

```

'define PI 3.141592

INPUT "Enter the radius of a circle: ",r
PRINT "The circumference is ";2*3.141592*r

'define car "Lamborghini"
'define show PRINT
'define bye END

PRINT "My favorite automobile is a ";
PRINT "Lamborghini"

END

```

•AC•



# The Fred Fish Collection

Due to the increasing size of the Fred Fish Collection, only the latest disks are represented here. For a complete list of all AC, AMICUS, and Fred Fish Disks, cataloged and cross-referenced for your convenience, please consult the current AC's Guide To The Commodore Amiga available at your local Amazing Dealer.

**Fred Fish Disk 451**  
**Line** A shareware outline whose function is to create outlines for notes or export to other programs. Line can save an outline as ASCII text and is clipboard compatible. This version utilizes a number of AmigaOS 2.0 features and thus requires 2.0. Support for the new ECS Denise display modes is also included. V2.1, an upgrade to FF394. Includes source in C. By David Schreier

**Convert** Converts 35 different image formats into CBM standard 24 bit IFF files for display on devices such as Black Belt Systems HAM-E product. Version 1.6, binary only. Author: Pete Patterson and Ben Williams

**ProDrivers** AmigaDOS 1.3 printer drivers for the IBM 4201 and 4202 series of printers. Version 1.0, binary only. By David White

**RCS** The Revision Control System (RCS) manages multiple revisions of text files. RCS automates the storing, retrieval, logging, identification, and merging of revisions. RCS is useful for text that is revised frequently, for example programs, documentation, graphics, papers, form letters, etc. This is an update to RCS version 1.2 on disks 281 and 282, and includes only the files that have changed. Author: Walter Tichy. Amiga port by Raymond Brand and Rick Schaeffer

**RRamDisk** Another recoverable ram disk. This one supports up to 32 units, can be auto-booted. Unused sectors are deleted from memory. The ram disk can be formatted, copied to, or used just like a normal disk drive. Binary only. By Bob Dayley

**SnoopDos** A utility for monitoring AmigaDOS calls. In particular, it allows you to see what libraries, devices, fonts, environment variables or startup files a program is looking for. Very useful when you're trying to install a new application. V1.2, an update to FF388. Includes source in C. By Eddy Carroll

**Fred Fish Disk 452**  
**Budget** A program to help with managing personal finances. V1.302, an update to FF416. Binary only. By Le Lay Serge Camille

**FLODemo** Floorplan Construction Set demo. Fully functional except the Save IFF function is disabled and 15 pages of clipboards have been replaced by a single sample page. This is version 1.48, binary only. By Jim Hennessey, Gramma Software

**ImageLab** A program which performs image processing on IFF pictures. Includes standard image processing functions such as convolution, averaging, smoothing, enhancement, histograms, FFT's, etc. Also includes file conversion functions, a clipboard, and other useful functions. Version 2.4, an update to version 2.2 on disk 243, includes bug fixes, PAL support, overscan and super-bit image support, improved point operation, better area selection, HAM histograms, and FFT's. Binary only. Author: Gary Millon

**MandelPAUG** A version of MandFXP with complete online help, a fully implemented Mandelbrot and Julia set "movie mode", and many improvements in the user interface. Version 2.1, binary only, source available. Author: Bruce Dawson, Steve Larocque, Jerry Hadden

**Fred Fish Disk 453**  
**AmigaTraction** "Concentration" like game for the Amiga, where you must locate matching letters on a grid that can range from 4x4 (easy) to 12x12 (difficult). Version 1.0, binary only. By Gabe Dalbec

**Lemmings** Demo version of an enchanting new game from Psygnosis. The lemmings are cute little guys you have to guide across the screen from one level to the next, over and under and around various obstacles, by using your mouse and changing each lemming's characteristics to get them to perform various useful tasks such as building bridges or digging through obstacles. Binary only. Author: Dave Jones, Gary Timmons, Scott Johnston, and Brian Johnston

**ProMot** A Projectile Motion plotter. Plots the path of a projectile fired with a variable initial velocity and angle. Display can be scaled, and time can be accelerated. The program returns the distance traveled and the time it took. This is version 1.01, includes source. Author: Chris Hogg

**Quick** A utility program specifically targeted at hard drive users to eliminate the frustration of launching programs on the Amiga. It eliminates the need to open Workbench windows and/or remember and type in long pathname to executables. Version 1.0, binary only. Author: Greg Gorty

**Fred Fish Disk 454**  
**Decol** A software fix for programs that use instructions which are privileged on the 68010/020/030. Update to the version on disk 18. Includes source in assembly. Author: Bryce Nesbitt

**Enforcer** Enforcer uses the MMU to build a shield of protection over anything that is not legal memory. Any empty holes in the address space are marked as illegal. Reads of the system ROMs are allowed, but not writes. With the exception of longword reads of location 4, the lowest 1K of memory is completely protected. When an illegal access is detected, the power LED will flash and a detailed message will be sent out the serial port. Binary only. Author: Bryce Nesbitt

**Redaku** A PostScript program which runs on PixelScript to edit other PostScript programs. Several examples and a detailed explanation are included. Author: John Starling

**StillStore** A program designed for freelance, corporate, and broadcast television. It loads and displays IFF images of any resolution interchangeably from a list file or as inputted directly (i.e.

Vortex

Fred Fish Disk 455

AngusCopy

ConvMacF

MemMon

Vit

Fred Fish Disk 456

CheatSheet

CManual

Fred Fish Disk 457

CManual

Line

QuickReq

Fred Fish Disk 458

ATCopy

Cah

GifMachine

random access). The user may easily skip forward or backward one or more pictures in the list. A "generic" display is always just a few seconds away. The program can be used "on air" with no concern that a pull down menu will suddenly appear in the viewable area. It also provides for a precise cue for changing windows or screens. While the main purpose is to load "news windows" of 1/4 screen size, StillStore can also handle full-sized and overscan images. Also includes slide show modes and a screen positioning feature. Stillstore is written in the Director language from the Right Answers Group. This is version 1.2.1, an update to version 1.2 on disk 317. Binary only, source available from authors. Author: R. J. (Dick) Bourne and Richard Murray

A universal accented character converter for Amiga, IBM-PC, Macintosh, and C64 files written in most west european languages (Danish, Finnish, French, German, Italian, Icelandic, Norwegian, Spanish, Swedish, and more. Works with either ASCII or Word Perfect files. Version 1.5, includes source. Author: Michel Lalbert

A disk copy program with intuition user interface. Version 2.0, shareware, includes source in Modula II. Author: Andreas Gunter

Converts Macintosh type 1 Adobe fonts to a format usable on the Amiga. Reads a compressed Macintosh format Adobe font file and unpacks it to an ASCII text file, which permits sending the font to a printer as a PostScript program. Includes source. Author: Unknown, Amiga port by Joe Pearce

A small memory monitor. Version II, shareware, includes source in Modula II. Author: Andreas Gunter

VLT is both a VT100 emulator and a Tektronix (4014 plus subset of 4105) emulator, currently in use at SLAC (Stanford Linear Accelerator Center). Although the VT100 port was originally based on Dave Wecker et al.'s VT100, many enhancements were made. Features include use of ARP, an ARexx port, XMODEM 1K/CRC and Kermit protocols, support for additional serial ports, external file transfer protocols (XPR), a "chat" mode, and scrollback/review/history buffer. It comes in two versions, one with Tektronix emulation, and one without. The Tektronix emulation allows saving IFF files, PostScript files, and printing bitmaps to the printer. This is version 5.034, an update to version 4.846 on disk 410. Binary only. Author: Willy Langeveld

A compilation of cheats, hints, backdrops, helpful passwords, codes, solves, and walkthroughs for over 150 Amiga games. February 1st, 1991 edition, an update to January 1st edition on disk 431. Author: Mark Shnyder

Parts 1 and 2 of a complete C manual for the Amiga which describes how to open and work with Screens, Windows, Graphics, Gadgets, Requests, Alerts, Menus, IDCMP, Sprites, VSPRites, AmigaDOS, Low Level Graphics Routines, Hints and Tips, etc. The manual also explains how to use your C Compiler and gives you important information about how the Amiga works and how your programs should be designed. The manual consists of 15 chapters together with more than 100 fully executable examples with source code. When unpacked, the manual and examples nearly fill up four standard Amiga floppies. This is version 2.0, an update to version 1.0 on disk 337. Because of its size, it is distributed on two floppy disks, parts 1 and 2 on disk 456 and parts 3 and 4 on disk 457. Author: Anders Bjørn

Parts 3 and 4 of a complete C manual for the Amiga which describes how to open and work with Screens, Windows, Graphics, Gadgets, Requests, Alerts, Menus, IDCMP, Sprites, VSPRites, AmigaDOS, Low Level Graphics Routines, Hints and Tips, etc. The manual also explains how to use your C Compiler and gives you important information about how the Amiga works and how your programs should be designed. The manual consists of 15 chapters together with more than 100 fully executable examples with source code. When unpacked, the manual and examples nearly fill up four standard Amiga floppies. This is version 2.0, an update to version 1.0 on disk 337. Because of its size, it is distributed on two floppy disks, parts 1 and 2 on disk 456 and parts 3 and 4 on disk 457. Author: Anders Bjørn

A shell written to enhance the bare-bones CLI with features that many people find useful in the UNIX shell, including history, aliases, a directory stack, the UNIX 1.15, includes source. Author: John D. Aycock

An "Ask utility" to replace the "ask" command from AmigaDOS. QuickReq can load arguments from files that make it possible to handle long questions and texts. Also supports optional line breaks in BodyText, an option to center text to window, DisplayBeep when requester is activated, setting your own FrontPen number, specifying requesters width and height and all kinds of overscan displays. First public release. Version 2.0, includes source. Author: Markus Aalto

A program to copy files from the Amiga side of a system equipped with a PC/AT bridgeboard, to the PC side, using wildcards. Copies directly through the shared memory. Supports CLI and Workbench usage. This is version 2.2, an update to version 2.1 on disk 429. New features include much faster copying and selection of all options using Workbench. Shareware, binary only. Author: Peter Vonwerk

Version 4.02a of a cash shell derived from Matt Dillon's shell, version 2.07. This is an update to version 4.01a on disk 331. Changes include bug fixes, preservation of file protection bits by cp, some new commands, and reformatting documentation. Includes source. Author: Matt Dillon, Steve Drew, Carlo Borneo, Cesare Diener

A program that will convert CompuServe GIF image files into IFF SHAM and 24bit ILMs. It offers a number of extra options like dithering, horizontal and vertical flip, as well as

TeXify

Fred Fish Disk 459

AmiDock

Conquest

Rogen

XprZmodem

Zoom

Fred Fish Disk 460

JMenu

NetHack

ShadowMaker

Fred Fish Disk 461

DFrags

DiskPrint

Logic

MandAnim

NewList

SBall

TDRAW

Tron

automatic border removal. Requires KickStart version 2.0 or greater to run. This is version 2.116, an update to version 2.104 on disk 405. Includes source. Author: Christopher Wichura

A package of ARexx scripts, for CynusEd users, which allows total control of AmigaTex from within CED. This is version 1.10e, binary only. Author: Wolf Faust

An Amiga version of the NeXT's "dock", but more versatile and not as limited. Provides you with a number of buttons on the Workbench screen that, when pressed, will launch other programs. These buttons are fully configurable to run any program you want. Version 1.2.4, binary only. Author: Gary Knight

Lore of Conquest is a war game similar in concept to the board game Risk. You are the lord of an entire world, destined to rule the galaxy. Some worlds are virgin fruits, ready for you to colonize. Some worlds have natives who do not wish to accept your rule, these you must conquer for they will yield more valuable resources. As you claim the galaxy you will find you are not the only one extending your dominion. This is a two player game, so be prepared to defend yourself and take what is yours! Version 1.3, an update to version 1.2 on disk 432. Binary only, shareware. Author: Michael Bryant

An ARexx library that allows you to call any function of almost any Amiga library from an ARexx program. This is version 1.0, binary only. Author: Francois Roux

An Amiga shared library which provides Zmodem file transfer capability to any XPR-compatible communications program. This is version 2.10, an update to version 2.0 on disk 261. Includes source. Author: Rick Huebner

A fast and efficient floppy disk archiving utility based on the data compression / decompression algorithms used by iLBM library. Has an intuition and a Shell interface, fully supports Kickstart 2.0, is able to add texts and notes to archived output files, knows 66 different bootblock viruses, includes a number of compression parameters (such as encryption of the output file) and a lot more. Version 4.1, an update to version 3.10 on disk 436. Binary only. Author: Olaf Olsen Barthel

This program allows an AmigaDOS script to display a menu, wait for the user to make a selection either with the mouse or the keyboard, and return the selection back to the script through an environment variable. It can also immediately execute any valid AmigaDOS command based upon the menu selection. The maximum size of the menu is based on the screen resolution and font size, up to a maximum of 26 selections of a maximum of 80 characters each and an optional title area of up to 4 lines. Version 1.1, binary only. Author: James Collins

A screen oriented fantasy game where your goal is to grab as much treasure as you can, retrieve the Amulet of Yendor, and escape the Mazes of Menace alive. On the screen is a map of where you have been and what you have seen on the current dungeon level. As you explore more of the level, it appears on the screen in front of you. NetHack generates a new dungeon every time it is played, thus even veteran players will continue to find it entertaining and exciting. This is version 3.0, patch level 10, an update to version 2.3 on disks 189 and 190. Binary only, source available. Author: Various, see documentation.

Demo version of an intuition based Font shadow generator. In seconds you can convert your favorite fonts into color fonts with professional video shadows built right in. The only restriction for this demo is that the final font height at SAVE times must be less than 40 pixels in height. Version 1.5, an update to version on disk 429. Binary only. Author: Stephen Lebrans

Disk Fragmentation reporting utility. Displays disk fragmentation for both floppy and hard disk devices. Does not attempt to change any data, just gives a report. Version 2.02, shareware, binary only. Author: Custom Services

Prints labels for 3.5" disks, primarily for PD library disks. Label data files can be loaded into memory so labels for most PD disks are available after a few mouse clicks. Features include three different label sizes, default file, different label library functions, Amiga-LibDisk contents read-in and easy handling. This is version 2.7.2, an update to version 2.3.5b on disk 441. Shareware, binary only. Author: Jan Geisels

A small game that is somewhat reminiscent of "File". Version 2.0, includes source in assembly. Author: Thomas Jansen

A Mandelbrot Animation program that allows you to easily generate series of lo-res 16-color pictures. Features full mouse and/or keyboard operation, zooms, auto-save, high (cheat) speed, iconization, preview, ease, etc. The generated pictures all remember their positions and settings so they can be reloaded. This is version 1.2, an update to version 1.1 on disk 387. Binary only. Author: Ekke Verheul

A powerful LIST replacement. Supports many features including sorts, character filters, case sensitivity, most options offered by LIST, data construction, UNIX wildcards, and much more. Sort routines are VERY fast and memory usage is minimal. Version 4.5, binary only. Author: Phil Dietz

A game using the joystick to control a "bouncing ball". Binary only. Author: Hertzog Wolfgang and Meisner Christian

An easy to use Window Title Bar Pattern Editor for use with TBar. Load, save, test, and edit patterns. Saves script files that can be executed later to change window patterns at anytime (like on boot-up). Includes TBar and a utility to pick a random TBar file so your Workbench will look different each time you reboot. Version 1.0, binary only. Author: Phil Dietz

Another game based on the lightning race sequence in the science fiction computer film "Tron". This is version 1.0, unrelated to other Tron releases in the library. Includes source in assembly. Author: Thomas Jansen

Fred Fish Disk 462

CacheDisk

DisTerm

Humaria

SealLance

UpdDown

Fred Fish Disk 463

ExecRexx

FileIO

ILBM

LibTool

PrintSpool

RexxIntuition

RexxLib

Cross

FileWindow

RexxLib

PictureEditor

Scan

Fred Fish Disk 464

PictureEditor

Scan

Fred Fish Disk 465

FCS

MRBackUp

TextPlus

Fred Fish Disk 466

DICE

DICE

DICE

DICE

DICE

DICE

DICE

Improves floppy disk throughput by caching entire tracks of data. Buffers disk reads and writes for maximum speed gain and has a user settable number of buffers for each drive. Version 1.0, binary only. Author: Terry Fisher

The dissidents telecommunication program. Has built in phone directory requester, attodial, various file transfer protocols, ascii send and capture, full/half duplex, split window, color requester, macro keys, selectable baud, CR/LF expansion, automatically configured per phone entry. Binary only. Author: Jeff Glat

An arcade game where each player controls a jet and must destroy the opponents jet, which is accomplished when a jet has been hit 75 by either missiles or air mines. Binary only. Author: Jason Bauer

Game based on a Trident submarine simulator. You must use the weapons at your disposal to liberate the earth's cities from alien occupation. Binary only. Author: Jason Bauer

The object of this game is to get four of your chips in a row (across, down, or diagonally) without letting your opponent get his chips in a row first. Binary only. Author: Jason Bauer

A program that turns an ARexx script into an executable which can be run from Workbench or the CLI. Binary only. Author: Jeff Glat

A file requester library based upon an example by R.J. Mical. Has numerous features, including uses other than disk I/O. Version 1.0, update to version 1.9 on disk 393. Binary only. Author: Jeff Glat, Jim Fiore, R.J. Mical

The item reader/writer library 0.5 and examples. Also can be used for non-ILBM files. 100% compatible with original Electronic Arts code. Binary only. Author: Jeff Glat

A utility that can quickly convert C or assembly code into an Amiga shared library. Also makes all support files including C and assembly include files, bmap files, Mann and Lattice pragmas, C glue stubs. Can also make a device. Binary only. Author: Jeff Glat

A shared library to easily add text or graphics print spooling to any C or assembly program. Binary only. Author: Jeff Glat

An ARexx function library which allows ARexx scripts to open windows, add menus, add proportional, boolean, and string gadgets, use requesters, load/save ILBM pictures, use a color requester, print text in various colors, sizes, and styles, draw colored lines and boxes, print text or graphics, etc. Binary only. Author: Jeff Glat

A shared library that can be used to easily add an ARexx implementation to any program in a memory efficient manner. Binary only. Author: Jeff Glat

A program that creates crossword puzzles. Has a message data file to allow easy translation into almost any human language, with English and German currently supported. This is version 3.3, includes source in M2Amiga Modula-2. Author: Jürgen Wenzel

A completely public domain file requester which may be used in any program, even commercial ones. It uses dynamically allocated memory to hold the file names so the only limitation is the amount of memory available. Includes a filter option to limit display of filenames to only ones with a specific extension. Names are automatically sorted while they are being read and displayed. This version has been enhanced by Bernd Schied for more device gadgets, renaming of files and directories, ANSI-C source, and more. Update to version 1.10 on disk 336. Includes source. Author: Anders Bjørn, Bernd Schied

An "object-oriented" paint program that allows you to create, modify, load, and save hierarchical structured picture objects. Version 1.12, shareware, binary only. Author: Hans W. Stremel

CLI utility to display the individual character contents of any file. Displays the ASCII and Hex values, count and percentage of total along with actual character (if displayable). Listing is displayed on a console window or optionally written to an output file. Possible uses would be to scan files for binary characters, relative character counts, matching numbers of special characters, determining LFI/CR configurations, etc. Version 1.0, includes source. Author: Dan Fish, console routine by Jim Cooper

Preview version of an iterated Fractal Construction Set program, used to generate iterated fractal images such as Sierpinski's triangle, ferns, etc. This is version 0.99, binary only. Author: Garth Thornton

An harc compatible archiver that is reported to be much faster than other available archivers and produce smaller archives. Version 1.01, shareware, binary only. Author: Jonathan Forbes

A hard disk backup utility that does a file by file copy to standard AmigaDOS floppy disks. Includes an intuition interface and file compression. Version 5.02a, an update to version 3.4 on disk 327. Shareware, binary only. Author: Mark Rinfel

A word processor for the Amiga, with both German and English versions. TextPlus enables you to write letters, books, programs etc. in a very easy and comfortable way. This is version 2.2E, the same as on disk 375. However, this release includes the source (the description on disk 375 claims the source is included but it was not). Author: Martin Stepler

Dillon's Integrated C Environment. A C frontend, pre-processor, C compiler, assembler, linker, and support libraries. Features include ANSI compatibility, many code optimizations, and autotool routines (user routines called



	during startup before main is called). This is version 2.06.15 (2.06B), an update to version 2.06.14 on disk 443. Shareware, binary only. Author: Matthew Dillon		
HamLabDemo	Demo version of an expandable image format conversion utility. Converts GIF, TIFF, PBMP/LSP, Spectrum 512, MTV, QRT, and Sun images into HAM and SHAM. Images can be scaled, dithered, color corrected, and cropped. This demo version is limited to processing images of 512 by 512 pixels or less. Version 1.1, shareware, binary only. Author: J. Edward Hanway		
Mosaic	Mosaic is a game played with a set of 81 two-by-two tiles on a 24-by-24 playing area. The objective of the game is to place your tiles such that squares of the same pattern are connected as much as possible. Version 1.0, includes source. Author: Kirk Johnson and Loren J. Rittle		
StopWatch	A stop watch application with the precision of one millisecond (variable), which scans the joystick button. Full multitasking capability and intuitive interfacing. AReflex port for parameter and result handling, and supports all non-proportional WorkBench fonts. Written in Modula 2 and assembly language. Version 2.0, binary only. Author: Christian Danner		
Fred Fish Disk 467			
Multiplot	An intuitive data plotting program featuring flexible input options, arbitrary text addition, automatic scaling, zoom and slide with clipping at boundaries, a range of output file formats and publication quality printed output. Workbench printers are supported via transparent use of the PLT device. This is version XLND, an update to version XLNC on FF373. Includes bug fixes, many new features, postscript and HP LaserJet III support, logarithmic axes. Author: Alan Baxter, Tim Mooney, Rich Champagne, Jim Miller		
PowerSnap	A utility that allows you to use the mouse to mark characters anywhere on the screen, and then paste them somewhere else, such as in another CLU or in a snip gadget. Checks what font is used in the window you snap from and will look for the position of the characters automatically. Recognizes all non proportional fonts of up to 24 pixels wide and of any height. Works with AmigaDOS 2.0 in both shell and WorkBench environments. Version 1.0, binary only. Author: Nico Francois		
Fred Fish Disk 468			
Post	An excellent PostScript interpreter for the Amiga which implements the full Adobe language. Supports type 1 and type 3 fonts, screen output, file output, and printer output. Requires AP library V39+ and ConMan V1.3+. This is version 1.5, an update to version 1.4 on disk 446. Changes include better type 1 font rendering and some bug fixes. Includes source in C. Author: Adrian Aylward		
Vt	Vt version 5.045, a partial update to version 5.034 on disk 455. Includes new executables with and without Tektronix emulation, and a new xpsrci library. You still need the files from disk 455 to make a complete distribution. Binary only. Author: Willy Langeveld		
Fred Fish Disk 469			
ArKace	A fast paced WWI biplane shoot'em up game built using Accolade's ShootEm Up Construction Kit. Binary only. Author: Robert Grace		
FastLife	A fast life program featuring an intuitive interface, four screen sizes, 19 generations/second, and 153 patterns in text file format. Version 1.0, binary only. Author: Ron Charlton		
Triangle	A game like Chinese checkers, consisting of four hundred pieces and one empty hole in a triangular formation. The object of the game is to leave one piece in the original empty hole or have eight pieces on the board and no possible moves. Version 1.1, includes source in BASIC. Author: Russell Mason		
WordPuzzle	The object of this game is to find a word in a puzzle arrangement. There are three different variations of the game. Version 1.1, includes source in BASIC. Author: Russell Mason		
Fred Fish Disk 470			
BCF	FORTAN-77 compiler, linker, and runtime support library. No Amiga specific hooks, just vanilla FORTRAN. ANSI compatible with extensions. Version 1.3c, binary only. Author: Andre Kostli		
KeyMenu	An alternative to Intuition's method of menu selection via the keyboard. Uses one key to activate the menu for the currently active window, the cursor keys to move through the menu as you choose, and the return key to select the desired menu item or escape key to abort selection. Works with AmigaDOS 2.0 mouse accelerator and has option to blank Intuition's pointer. Version 1.03, includes assembly source. Author: Ken Lowther		
TripleYachtZ	An implementation and variation of the game "Yacht". Plays both Single (the standard game) and Triple, which differs from normal Yacht-Z in that all scores in the 3rd column of your scorecard are worth three times as much as the normal value and those in the 2nd are worth double. Version 1.2, binary only, source available from author. Author: Stephan Iannos		
Fred Fish Disk 471			
BTNTape	A "Better Than Nothing" SCSI tape device handler. It provides fast file access to a SCSI tape drive from application programs using simple DOS calls to Read() and Write(). It can also be used as the Amiga TAR utility for disk backups. It requires a "SCSI-direct" compatible SCSI bus adapter but will also work with the A2000(A). It now supports many more tape drives, and has some new features. This is version 2.0, an update to version 1.0 on disk 392. Includes source. Author: Robert Rethemeyer		
Machili	A "mouse accelerator" program that also includes hotkeys, status of run/mouse click/hold, popd, title bar click with a bios online charge accumulator. AReflex support and much more. Updates for WorkBench 2.0 have been added along with many fixes and new features. This is version 3.1, an update to version 3.0 on disk 378. Binary only. Author: Brian Moats and Polylog software		
MoleWt	MoleWt is a molecular weight calculator. The program accepts a chemical formula and returns the molecular weight. This is version 1.01, binary only. Author: John Kennan		
Uedit	A nice shareware editor with learn mode, a command language, menu customization, hypertext, online help, a teach mode, split windows, copy and paste, undo, features. This is version 2.6b, an update to version 2.6c on disk 415. Binary only. Author: Rick Siles		
Fred Fish Disk 472			
CNewsBin	This is part 1 of a C News distribution for the Amiga. This part includes all the binary and text files necessary to set up and run C News. Part 2 is available on disk 473 and contains the source. C News uses UUCP, such as Matt Dillon's implementation (see disks 479 and 480) or that included with this software (previous version disk 319). This package has been reworked and now includes a newsreader, AmigaRN (Shareware). All major (and a few minor) features of Unix C News are implemented. The Author refers to this as release 15-Dec-90, an update to the original version on disks 318 and 319. Author: Various. Amiga port by Frank Edwards		
iCalc	An expression calculator that works with real and complex numbers, has arbitrarily named variables and user-defined functions, startup files and more. Version 1.0, includes source. Author: Martin Scott		
IFFBeep	A small utility that lets you replace the screen flash of DisplayBeep() with any IFF 8SVX sound file. Also plays sounds on disk insertion/removal. It can be run from the CLI or WorkBench and includes an interactive "control panel". Version 2.0, binary only. Author: Paul Wilkinson		
Fred Fish Disk 473			
BigBrother	A virus infection detection program with some optional utilities. It runs as a normal task and checks every 1 second the important memory locations in the Amiga. As a bonus, BigBrother is capable of starting a new shell, starting script files, viewing and installing bootbooks. All this in a program less than 10K. Includes assembly source. Author: Erwin van Breen		
CNewsSrc	This is part 2 of a C News distribution for the Amiga. This part includes all the source for C News. Part 1 is available on FF472 and includes all the binary and text files necessary to set up and run C News on the Amiga. CNews uses UUCP, such as Matt Dillon's implementation (see disks 479 and 480) or that included with this software's previous version (disk 319). This package has been reworked and now includes a newsreader, AmigaRN (Shareware). All major (and a few minor) features of Unix C News are implemented. The Author refers to this as release 15-Dec-90, an update to the original version on disks 318 and 319. Author: Various. Amiga port by Frank Edwards		
Family_Sol	A preliminary version of the Authors' "Family Solitaire" card game. A standard game of Solitaire with options for multiple players, sound etc. Binary only. Author: Enrol Wainford		
MissileCmd	A fast Missile Command game written in assembly. Features include using a hires interlaced screen, time based events for correct operation on any speed Amiga, multitasking friendly, and sound effects. This is version 2, an update to the version on disk 444, with bug fixes and enhancements. Binary only. Author: Max Bithard		
Fred Fish Disk 474			
Aequopit	A program that renders multicolor pictures using an algorithm based on electrostatic effects. Renders in low-res and high-res, and in two speed-quality modes. Includes both PAL and NTSC versions of the program. English and German docs. This is version 1.06, includes source in PCQ, freeware. Author: Juergen Matern		
AmiDock	AmiDock is an Amiga version of the NeXT's Dock facility. It will open up a small window on your WorkBench full of little IFF brushes. Each brush represents an application, like an ICON but it's a brush. Click on the brush and your application will start. This is version 1.2.4. Shareware, binary only. Author: Gary Knight		
CrcLists	Complete CRC check files for disks 401-470 using the brik program. These were made directly from my master disks. This is an update to the lists on disk 401. Author: Fred Fish Detects/protects against illegal memory hits. Compatible with all OS versions & machines (requires a Memory Management Unit or 68030 processor). The low 1K of memory and all areas that are not RAM are protected from CPU reads or writes. ROM is marked as read-only. Version 2.0, binary only. Author: Bryce Nesbitt		
Enforcer	A 12 point font with Greek letters. Version 1.0. Author: Daniel Moosbrugger		
Imperium	The "RISK" style game for up to four players. Based in ancient times of Rome, Athens, Alexandria and Carthage. Binary only, shareware (\$10). Many C source available from the Author. English version 1.66E and German version 1.79D. Update to version 1.50E on Disk 362. Author: Roland Richter		
Fred Fish Disk 475			
AssignX	A 2.0 only utility to create assignments when you get a "Please insert volume" requester. Also lets you cancel the request, forever. Installs by dropping into your WBStartup drawer. This is version 1.0, includes source. Author: Steve Tibbett		
Blankette	VERY tiny screen blanker/dimmer. Very nice on your system, very little CPU time, compatible with just about everything. Dims screen rather than going black. Includes assembly source. Author: Max Bithard		
CITAS	Convert ILM to Assembly Source. CITAS allows one to easily put graphics into his/her own programs. CITAS takes a standard IFF ILM image file and converts it into either assembly or C source code. Designed for blitter image control, all of the necessary labels are generated, along with color map information, mask generation, and other options. This is version 2.0, shareware, binary only. Author: Max Bithard		
GadgetED	A program for creating and editing intuition gadgets. Includes a palette editor, generation of either C or assembly source, and binary saving for later loading and editing. Also comes with "PatchGE", a program for converting the original format of GadgetED binaries to be loadable by this and future versions. Version 2.3, an update to version 2.0 on disk 438, includes source. Author: Jan van den Baard		
ToolLib	A shared library containing 45 useful functions for all kinds of programs. There are functions for ports, sorting, gadgets, memory, string, directory and file handling, etc. Version 8.1, an update to version 7.6 on disk 438, includes source. Author: Jan van den Baard		
Fred Fish Disk 476			
Browser	A programmer's "Workbench". Allows you to easily and conveniently move, copy, rename, and delete files & directories from a CLI environment. Also provides a method to execute either Workbench or CLI programs. Version 1.7, an update to version on disk number 180, binary only. Author: Peter da Silva		
MED	A music editor much like SoundTracker. A song consists of up to 50 blocks of music, which can be played in any order. Editing features include cut/paste/coxy tracks or blocks, changing the vibrato, tempo, crescendo, and note volume. Other features include switching of the low-pass filter on or off on a per song basis, and a cute little animated pointer of a guy doing "jumping jacks" in time to the music! Improvements include AmigaDOS 2.0 compatibility. This is version 3.0, an update to version 2.13 on disk 424. Binary only. Author: Teijo Kinnunen		
Mostra	Mostra is a shareware IFF utility featuring real-time unpacking script, dozens of options, "smart" analysis of any IFF file (FORMs, LISTS,.... also nested ILMs), total control over display modes, simple slideshow processing, pattern matching, SHAM, an external link to show Dynamic Mode pictures, double buffering, fast decompression, color cycling, TexXocs, startup files for easy custom configurations and complete WB support, through ToolTypes and Style icons! This is version 1.14, an update to version 1.0 on disk 330. Binary only. Author: Sebastiano Vigna		
ToolManager	ToolManager is a full featured program to add programs (either Workbench or CLI) to the tools menu of the 2.x WorkBench. Programs can be added by dragging their icons onto the ToolManager "config" window or the optional ToolManager icon or by editing the config file. Requires Workbench 2.0. This is version 1.3, an update to FF442. Includes source. Author: Stefan Becker		
Fred Fish Disk 477			
IRMaster	This is a hardware/software project to allow the Amiga to read an infrared remote control via the parallel port. Includes an ILM of the schematic for a simple interface to the A1000 parallel port, some modifications are needed for other Amigas. The source code and executable for a reader program are included. For further functionality modifications to the source can be performed. By Ron Peterson		
MegaBall	This is a new version of the game "Ball" by the same author. It is a Breakout type game, and is very good. Complete with impressive sound. This one's addicting. Binary only. Author: Ed Mackey		
NoDelete	This program pops up a requester to alert you of a file deletion being attempted via the Deleters, and allows you to accept or cancel it. Also allows to any files you attempt to delete via "delete". Version 1.5a source is included. Author: Uwe Schurkamp		
Fred Fish Disk 478			
LSlabel	A simple label printing utility. Very powerful as the user can/must do a lot of settings by himself. Features include variable linefeeds (in 1/216 inch steps), a very exact setting of the label length and freely configurable border codes. Version 1.0, binary only. Author: Stefan Berendes		
MED-Songs	A selection of musical pieces created with MED, the musical editor program (see disk 476 for MED 3.00). Includes MEDPlayer version 3.0. Author: Hans H. Adam		
MP	A small, useful utility for sending any MIDI data back and forth between the Amiga and a MIDI instrument. Helpful for learning about MIDI, writing/debugging MIDI software, figuring out your instrument's system-exclusive implementation, and more. Very versatile. Version 1.0, includes source. Author: Daniel J. Barrett		
NewList	A powerful LIST replacement. Supports many features including sorts, character filters, case sensitivity, most options offered by LIST, date construction, UNIX wildcards, and much more. Sort routines are very fast and memory usage is minimal. Version 4.9, an update to version 4.5 on disk 461. Binary only. Author: Phil Dietz		
Fred Fish Disk 479			
CheckPrt	A small program for checking the presence of a parallel printer from within a script file. Binary only. Author: Tom Kroener		
TDP	A small trackdisplay program that uses whatever screen is up front. Binary only. Author: Tom Kroener		
UUCP	An implementation of uucp for the Amiga, including mail and news. This is Matt's version for the Amiga, based on William Lotus's Amiga UUCP 0.40 release with news code from his 0.50 release, and months of work by Matt to make fixes and add enhancements. This is version 1.13D, an update to version 1.08D on disk 442, and consists of four parts. Parts 1 and 2 are on this disk, and parts 3 and 4 are on disk 480. Includes source. Author: Various, major enhancements by Matt Dillon		
Fred Fish Disk 480			
Cryptor	A program that encrypts and decrypts data (files). It uses a mathematical algorithm with password key protection. Has both English and German versions and documentation. This is version 1.0, binary only. Author: Thomas Schossow		
NoCar	This utility speeds up your windowing environment. The OpenWindow vector is patched. When someone tries to open a window in the workbench screen, the lower refresh bit in the nw.Flags field is cleared. This way, only NOCAREREFRESH windows will be opened, resulting in faster window movements. Windows opened in custom screens are not affected. This is version 1.5. Assembly source included. Author: Raymond Hoving		
TpEdit	A gadtools template editor. It is able to generate nearly standalone C source code. The program will only run under OS 2.0, Kickstart 37.73 or higher. This is version 1.00 Alpha. Includes source. Author: Matt Dillon		
UUCP	An implementation of uucp for the Amiga, including mail and news. This is Matt's version for the Amiga, based on William Lotus's Amiga UUCP 0.40 release with news code from his 0.50 release, and months of work by Matt to make fixes and add enhancements. This is version 1.13D, an update to version 1.08D on disk 442, and consists of four parts. Parts 1 and 2 are on disk 479, and parts 3 and 4 are on this disk. Includes source. Author: Various, major enhancements by Matt Dillon		
Fred Fish Disk 481			
K1	An editor program for the Kawai K1-II synthesizer. Includes a bankloader for single-patches and multi-patches, a single-patch editor, a multi-patch editor, and support for the patch-session and K1 controllers. Version 4.8, binary only. Author: Andreas Jung		
MCP	A "TRON" like cycle race game for up to four players. Version 13.76, update to version on disk 338, includes source in assembly. Author: Jorg Sirt		
TLPatch	A utility to allow corrections in pronunciation for programs that use the Translate() function. It allows you to extract the exception table from the translator library, use a text editor to edit the table, and then restore it back into the library. Version 1.0, includes source. Author: Richard Sheppard		
WaveMaker	WaveMaker is intended to give beginning music and physics students a "hands on" feel for how complex waves are made by adding a harmonic series of sine waves. A fundamental and up to seven harmonics are available. The resulting waveform can be displayed on the screen or played on the audio device using the keyboard like a piano. A game mode is also provided. Version 1.2, an update to version 1.1 on disk 318, with several bugs fixed, more efficient code, and a new display option. Includes source. Author: Thomas Meyer		
Fred Fish Disk 482			
Ephemer	A program which calculates the positions of the sun, moon, and planets for any date and any place. Includes source in HiSoft BASIC. Author: Yvon Alemany		
Molec3D	An interactive 3D solid modeling program for molecules. Produces a graphic, three dimensional representation of molecules, based on 3D coordinates data from geometry optimization programs, X-ray measurements, or any other source. Can handle up to 500 atoms at a time. Requires 1Mb or more of memory. Version 1.022, binary only. Author: Stefan Abrecht		
Fred Fish Disk 483			
ButExchange	An input handler to help left handed Amiga users. It reverses the function of the mouse buttons, so that the left button becomes the right and vice versa. Very small, uses only 168 bytes of memory. Version 1.0, includes source in assembler. Author: Preben Nielsen		
ColorSamples	A few executable color samples made by ColorCatcher on disk 396. Contains the 'old' colors from kickstart 1.3 and the 'new' colors from kickstart 2.0. Very useful because some programs/icons look awful when displayed in colors other than the ones they were created for. Author: Preben Nielsen		
InputLock	An input handler to help Amiga users who have cats other pets (or children) that mess with the Amiga as soon as it is left for a second. It installs an input handler which lets you lock the keyboard and mouse by pressing a few buttons. Very small, uses only 190 bytes of memory. Version 1.0, includes source in assembler. Author: Preben Nielsen		
MED	MED is a music editor that can be used to compose music for demos/games etc. It can be used as a stand-alone music program as well. The features include built-in sample editor, synthetic sound editor, MIDI support (up to 16 tracks), and options to read/write NoiseTracker modules. Includes routines that allow programmers to easily incorporate music made with MED in their programs. This is version 3.10, an update to version 3.00 on disk 476. Binary only. Author: Teijo Kinnunen		
MouseXY	A small utility that opens a little window in which it shows the mouse coordinates and the color at that position. It can be moved from screen to screen and is able to show coordinates even when you are moving/resizing windows or moving Workbench icons. Version 1.0, includes source in assembler. Author: Preben Nielsen		
PicSaver	A small utility that allows you to cut rectangular portions of any screen and store them on disk as IFF ILM files. Also allows easy saving of windows and entire screens to disk. Version 1.0, includes source in assembler. Author: Preben Nielsen		
PointerX	Spins the hands of any pointer that looks like the standard AmigaDOS 2.0 Workbench "busy" pointer (a clock). Will also work with any application that uses the same pointer. Includes source. Author: Steve Tibbett		
PSX	A public screen manager for AmigaDOS 2.0. Lets you open, manipulate, and close public screens, set the global public screen bits, and provides a good example of using GadTools and ReadArgs. Version 1.1, an update to version on disk 418. Includes source. Author: Steve Tibbett		
PWKeys	An input handler that allows you to manipulate windows and screens by pressing keys on the keyboard. It currently lets you perform 17 different functions. Includes an interactive program to define functions. Very small, uses only 1124 bytes of memory. Version 1.0, includes source in assembler. Author: Preben Nielsen		
TD	A program like TrackDisplay on disk 399 by Olaf Barthel. It monitors and displays the current track for each floppy disk connected to the Amiga. Version 1.0, includes source in assembler. Author: Preben Nielsen		
Fred Fish Disk 484			
BootPic	BootPic allows you to install nearly any IFF picture that you like in place of the WorkBench hand that appears after a reset. Version 1.0, includes source in assembly. Author: Andreas Ackermann		
EZAsm	Combines parts of C with 68000 assembly language. The resulting code is optimized as much as possible. New bundled with AS8k and Blink for a complete programming environment. New "clib" functions and more. This is version 1.5, an update to version 1.31 on disk 431. Includes example source and executable files. Binary only. Author: Joe Siebenmann		
MSClock	A clock utility, which displays memory, date, time and online time (if connected to another computer via modem) in the titlebar of the WorkBench screen. This is version 1.3, includes source. Author: Martin Steppeler		
Spright	Spright is a sprite making utility. Simple or attached sprites can be saved to a file ready to be added to your programs. The colors used with the sprites will also be saved. Version 1.2, binary only. Author: Todd Neumiller		
TextPlus	A word processor for the Amiga, with both German and English versions. This is version 3.0, an update to version 2.2E on disk 455. New features include the ability to print footnotes and serial letters, multiple windows, an AReflex interface with 120 commands, powerful block operations, ANSI-compatibility, ability to load files crunched by PowerPacker, etc. Shareware, binary only. Author: Martin Steppeler		
Viewer	Displays IFF pictures fast! Version 1.0. Includes source in EZAsm. Author: Joe Siebenmann		



<b>Fred Fish Disk 485</b>	<b>Drawmap</b>	A program for drawing representations of the Earth's surface. This version includes a completely rewritten user interface and some new functions. Version 2.254, an update to version 2.0 on disk 315. Includes source. Authors: Bryan Brown & Ulrich Denker	<b>Fred Fish Disk 481</b>	<b>bBaseII</b>	A simple database program using an intuition interface. Stores, sorts, and searches for information. Limited to 9 fields in each record. Features include fast sorting, search in any field, and best of all, it's really easy to use. Binary only. Author: Robert Bromley	<b>StackWatch</b>	Monitors the stack of any selected task or process 30 times per second and reports the allocated stack, maximum stack used, and current stack used. Version 1.0, binary only. Author: Jim Locker	<b>Reboot</b>	A program which reboots your Amiga by calling exec's Cold-Reboot() function. This is version 1.02. Includes source in C. Author: Stefan Sticht				
<b>NittyTerm</b>	<b>NittyTerm</b>	It is originally designed to be used with DNet, but it has been expanded so that it may be used as a normal terminal emulator. NittyTerm was designed to be a good emulator of these terminals, as well as being fairly small and fast. Version 1.2, an update to version 1.0 on disk 403. Binary only, source available from authors. Author: Christopher Newman, Todd Williamson	<b>DICE</b>	Dillon's Integrated C Environment. A C frontend, pre-processor, C compiler, assembler, linker, and support libraries. Features include ANSI compatibility, many code optimizations, and automatic routines (user routines called during startup before main is called). This is version 2.06.21, an update to version 2.06.15 on disk 466. Includes bug fixes and experimental dynamic object module loading support. Shareware, binary only. Author: Matthew Dillon	<b>Blanker</b>	A utility for blanking the screen after a defined period of no action. Shows a multicolor Amiga checkmark. This is version 1.1, binary only, requires AmigaDOS 2.0. Author: Markus Stoll	<b>vScreen</b>	Allows you to have screens that are larger than the actual display area of your monitor. These larger "virtual screens" scroll when you move the mouse off the edge of the visible section of the screen. Currently does not work under AmigaDOS 2.0. Includes source. Author: Davide Cervone	<b>Request</b>	Opens the OS 2.0 autorequester from script files. Title, text, gadgets and publicscreen of the requester can be changed by commandline options. This is version 1.00. Includes source in C. Author: Stefan Sticht			
<b>Spades</b>	<b>Spades</b>	This is an Amiga version of the card game spades. It is a one player version, where the computer plays your partner and two opponents. This is version 1.2, an update to version 1.1 on disk 392. Includes source in C. Author: Greg Steimack	<b>Blanker</b>	A utility for blanking the screen after a defined period of no action. Shows a multicolor Amiga checkmark. This is version 1.1, binary only, requires AmigaDOS 2.0. Author: Markus Stoll	<b>Blanker</b>	A utility for blanking the screen after a defined period of no action. Shows a multicolor Amiga checkmark. This is version 1.1, binary only, requires AmigaDOS 2.0. Author: Markus Stoll	<b>FreeFish Disk 495</b>	<b>AnalytCalc</b>	The AnalytCalc spreadsheet, directly executable. This version features operation with only one window, many "3 dimensional" sheet addressing primitives, and optional execution from icons. Two images are furnished, one for smaller and one for large internal storage (though both have software virtual memory if needed). These images operate OK under AmigaDOS 1.2, 1.3, and 2.0. They include code allowing the spreadsheet to be treated as a series of "pages" so that a cell has a row, column, and (optionally) page, and ranges can be in depth along pages as well as along rows or columns. The mapping is flexible enough so that it can be used to facilitate computing traces of matrices if desired, as well as for more conventional use. Version V25-03B, an update to version V24-01a on disk 328. Includes source. Author: Glenn Everhart	<b>WindowShuffle</b>	Activates and brings to front next or previous window with hotkeys. Hotkeys can be changed. Implemented as a commodity. Requires AmigaOS 2.0. This is version 1.05. Includes german version and source in C. Author: Stefan Sticht		
<b>Fred Fish Disk 486</b>	<b>Metatont</b>	Amiga port of the Metatont package, a program to create TeX fonts. Includes versions for 68000 and 68020. Disk 487 contains a copy of the Metatont font source files from the TeX distribution tapes, including the Computer Modern Roman and the LaTeX fonts. This is version 2.7, binary only. Author: Donald E. Knuth, Stefan Becker (Amiga port)	<b>Klondike</b>	A single player card game. Version 1.1c, binary only. Shareware. Author: Peter Wiseman	<b>FreeFish Disk 492</b>	<b>LoanCalc</b>	Keyboard and mouse driven mortgage utility. Although similar programs exist, this one is unique in that it is designed to track "Open" mortgages that allow any size payment to be made at any time, as well as providing a printed amortization table for fixed mortgages with monthly, semi-monthly, bi-weekly and weekly payment schedules. This is version 1.4, an update to version 1.2 on disk 366. Binary only. Author: Robert Bromley	<b>FreeFish Disk 495</b>	<b>AnalytCalc</b>	The AnalytCalc spreadsheet, directly executable. This version features operation with only one window, many "3 dimensional" sheet addressing primitives, and optional execution from icons. Two images are furnished, one for smaller and one for large internal storage (though both have software virtual memory if needed). These images operate OK under AmigaDOS 1.2, 1.3, and 2.0. They include code allowing the spreadsheet to be treated as a series of "pages" so that a cell has a row, column, and (optionally) page, and ranges can be in depth along pages as well as along rows or columns. The mapping is flexible enough so that it can be used to facilitate computing traces of matrices if desired, as well as for more conventional use. Version V25-03B, an update to version V24-01a on disk 328. Includes source. Author: Glenn Everhart	<b>FreeCopy</b>	FreeCopy is unlike most copiers in that it does not actually copy disks. It removes the protection so disks can easily be backed up with almost any program, and in some cases be installed on your hard drive. Version 1.4, binary only. Author: Greg Pringle	
<b>SoundEd</b>	<b>SoundEd</b>	Demo version of an 8SVX sound editing package, written in machine code for optimum speed and minimum size. Can also be used for digitizing with SoundEd or Perfect Sound hardware. Version 1.0, demo, binary only. Author: Howard Dorch and Mike Coriell	<b>LoanCalc</b>	Keyboard and mouse driven mortgage utility. Although similar programs exist, this one is unique in that it is designed to track "Open" mortgages that allow any size payment to be made at any time, as well as providing a printed amortization table for fixed mortgages with monthly, semi-monthly, bi-weekly and weekly payment schedules. This is version 1.4, an update to version 1.2 on disk 366. Binary only. Author: Robert Bromley	<b>FreeFish Disk 495</b>	<b>AnalytCalc</b>	The AnalytCalc spreadsheet, directly executable. This version features operation with only one window, many "3 dimensional" sheet addressing primitives, and optional execution from icons. Two images are furnished, one for smaller and one for large internal storage (though both have software virtual memory if needed). These images operate OK under AmigaDOS 1.2, 1.3, and 2.0. They include code allowing the spreadsheet to be treated as a series of "pages" so that a cell has a row, column, and (optionally) page, and ranges can be in depth along pages as well as along rows or columns. The mapping is flexible enough so that it can be used to facilitate computing traces of matrices if desired, as well as for more conventional use. Version V25-03B, an update to version V24-01a on disk 328. Includes source. Author: Glenn Everhart	<b>Paiky</b>	Demo version of an English to German (and vice versa) word translation translator. Version 1.2, binary only. Author: David Wetzel	<b>TapeCover</b>	TapeCover prints out those little paper inserts for cassette tape cases. It lets you enter the name of the songs, and the title of each side. It should work on any printer that can print in that semi-condensed mode. Version 1.0, includes source in C. Author: Greg Pringle		
<b>Fred Fish Disk 487</b>	<b>AssignX</b>	A 2.0-only utility to create assignments when you get a "Please insert volume" requester. Also lets you cancel the request, forever. Installs by dropping into your WBStartup drawer. This is version 1.2, an update to version 1.0 on disk 475. Includes source. Author: Steve Tibbett	<b>SBProDemo</b>	A restricted use trial version of Superbase Professional 4 complete with sample application. The limitations are 35 records max per file, programs can be edited but not saved, and forms can be edited but not saved or printed. In every other respect this is identical to the release product. SBPro4 is compatible with SBA Windows V1.21. Version 1.0, binary only. Author: Precision Software Limited	<b>FreeFish Disk 496</b>	<b>AvailMem</b>	A small free memory counter that continuously displays the amount of (and size of the largest block of) free chip, fast, and total memory in bytes (as opposed to K). This is version 1.12, a Workbench 2.0-compatible upgrade to version 1.03 on disk 285. Includes source. Author: Dave Schreiber	<b>YatZ</b>	One player Yatzee game. This program was written to take up little memory and to multitask nicely. Version 1.0, includes source in C. Author: Greg Pringle	<b>WordSearch</b>	This is an automated wordsearch generator. Words or letters can be limited to any subset of the eight primary directions and the puzzle can be rotated or flipped. It has a spartan but functional user interface highlighted by the req:library. The system default font under WB 2.0 is supported for the puzzle display window. Version 1.0, includes source in C. Author: Craig Leaver		
<b>MFSc</b>	<b>MFSc</b>	A copy of the Metatont font source files from the TeX distribution tapes, suitable for use with the Amiga port of disk 486. Includes source in the Computer Modern Roman and the LaTeX fonts. These should be sufficient to run a normal TeX installation. Author: Various	<b>AmiBack</b>	Demo version of a new backup utility. Features include backup to any AmigaDOS compatible device (such as floppies, removable hard disks, fixed media hard disk, and tape drives), no copy protection, configuration files, complete backups, incremental backups, selective backups, file exclusion filter, setting of archive bit, etc. Demo version does not have restore, compare, or scheduler. Version 1.03, an update to version 1.0 on disk 447. Binary only. Author: MoonLighter Software	<b>FreeFish Disk 496</b>	<b>AvailMem</b>	A small free memory counter that continuously displays the amount of (and size of the largest block of) free chip, fast, and total memory in bytes (as opposed to K). This is version 1.12, a Workbench 2.0-compatible upgrade to version 1.03 on disk 285. Includes source. Author: Dave Schreiber	<b>ZoomDaemon</b>	Adds a "zoom" gadget to every window that can be resized. Pressing this gadget makes the window as large as possible or as small as possible, or brings it back to its normal size. Version 2.1.3, includes source. Author: Davide Cervone	<b>FreeFish Disk 499</b>	<b>Diglib</b>	An Amiga device independent graphics library for fortran applications. This is an enhanced and debugged version of a public domain library, the development of which was sponsored by the US Government. This library is required for part of the Matlab package, also included on this disk. This is an update to the version on disk 267. Includes source in FORTRAN. Author: Hal Brand, Craig Wetzel, James Locker, Mike Broda	
<b>PPrint</b>	<b>PPrint</b>	A printing utility, designed for all those who slowly but surely become frustrated with programmers who think that they can do a form feed better than their printer can. This one relies on the printer itself to do the formatting, and on the program to send the settings. Features include a full icon driven user interface, the ability to convert tabs to no size, and the ability to save a number of standard settings. Version 1.10, includes source. Author: Marc Jackisch	<b>AmiLib</b>	A library of Workbench-ROM-Kernel interface routines for use with AdoSoft Fortran. Includes source. Author: Jim Locker	<b>FreeFish Disk 499</b>	<b>Diglib</b>	An Amiga device independent graphics library for fortran applications. This is an enhanced and debugged version of a public domain library, the development of which was sponsored by the US Government. This library is required for part of the Matlab package, also included on this disk. This is an update to the version on disk 267. Includes source in FORTRAN. Author: Hal Brand, Craig Wetzel, James Locker, Mike Broda	<b>Matlab</b>	A FORTRAN package (MATLAB Laboratory) developed by Argonne National Laboratories for in house use. It provides comprehensive vector and tensor operations in a package which may be programmed either through a macro language or through execution of script files. Supported functions include sin, cos, tan, arctangents, upper triangular, lower triangular, determinants, matrix multiplication, identity, hilbert matrices, eigenvalues, eigenvectors, matrix roots, matrix products, inversion, and more. Amiga specific features include workbench startup, polar plots, contour plots, enhanced plot buffer control, and algorithmic plot display generation. This is an update to the version on disk 267, with many bug fixes and code reorganizations. Includes source in FORTRAN. Author: Jim Locker, Clevie Molter, Mike Broda	<b>FreeFish Disk 500</b>	<b>Signal</b>	Two programs designed to make it easy to write shell scripts that must be synchronized with the operation of another, in order to avoid disk thrashing for example. Includes source. Author: Davide Cervone	
<b>SGD</b>	<b>SGD</b>	This program makes it possible to delete games, that are saved by any of the existing Sierra adventures (e.g. Leisure suit Larry). The program has a LEARN-option for including new adventures. Version 1.0, binary only. Author: Macco Ditzel	<b>AmiGantt</b>	A project definition and management tool designed to create a simple, interactive method of outlining the task required to complete a particular project, using the GANTT chart as the input format. AmiGantt displays the project in a multi-window mode with separate windows for the GANTT chart, task information input, resource histogram display, and PERT chart display. Up to 500 tasks may be defined for any project, and a project may contain other projects as tasks. Version 4.0.0, an update to version 3.0.0 on disk 248. Shareware, binary only. Author: Donald Tolson	<b>FreeFish Disk 497</b>	<b>AutoActivate</b>	A commodity which activates the window under the mouse-pointer when pressing any key. Requires AmigaOS 2.0. This is version 1.06. Includes german version and source in C. Author: Stefan Sticht	<b>sWindows</b>	A program that allows you to use the title of a window to specify the screen on which the window will appear. This provides a method of opening CON: and RAW: windows on screens other than the WorkBench, for example. Includes source. Author: Davide Cervone	<b>wlonly</b>	A program, and number of companion utilities, that allow you to specify which screen, and how many screens, including custom screens. Iconified windows become small icons on the bottom of the screen, and they can be opened again by double-clicking them. Also allows any screen to become a shared, WorkBench-like screen, and gives you the ability to create new screens specifically for this purpose. Each window can have its own custom icon. There is a programmers interface to allow programs to control their own icons. Version 3.8, includes source. Author: Davide Cervone		
<b>SuperDuper</b>	<b>SuperDuper</b>	A very fast disk copier and formatter. Can make up to four unverified copies from a ram buffer in 36 seconds. Verified copies from a ram buffer take 67 seconds for one destination drive, plus 34 seconds for each additional destination. Binary only. Author: Sebastiano Vigna	<b>BBFormat</b>	A floppy disk formatter for diskettes with hard errors. Bad media areas are mapped out so AmigaDOS will not use them. Presently not intuitionized, runs from CLI. Only Version 5/7/91, includes source. Author: David Varley	<b>FreeFish Disk 497</b>	<b>AutoActivate</b>	A commodity which activates the window under the mouse-pointer when pressing any key. Requires AmigaOS 2.0. This is version 1.06. Includes german version and source in C. Author: Stefan Sticht	<b>To Be Continued.....</b>		<b>In Conclusion</b>	To the best of our knowledge, the materials in this library are freely distributable. This means they were either publicly posted and placed in the public domain by their authors, or they have restrictions published in their files to which we have adhered. If you become aware of any violation of the authors' wishes, please contact us by mail.		
<b>View80</b>	<b>View80</b>	Scrolling text file reader with three scrolling modes controllable via keyboard or mouse. Opens file requester if no filename is given. Automatically configures screen size for PAL or NTSC machine. Version 2.0, an update to version 1.1 on disk 365. Binary only. Author: Federico Giannini	<b>BizCalc</b>	A do-it-all user friendly loan calculator that calculates weekly and biweekly loans. Can generate amortization tables to the screen, to the printer, or to a file. Uses menus, buttons, or keyboard commands, and configures. Has six decimal precision option and more. This is version 1.1, an update to version 1.0 on disk 385. Binary only. Author: Michel Laliberte	<b>FreeFish Disk 497</b>	<b>AutoActivate</b>	A commodity which activates the window under the mouse-pointer when pressing any key. Requires AmigaOS 2.0. This is version 1.06. Includes german version and source in C. Author: Stefan Sticht	<b>Back&amp;Front</b>	Sends a window to back or brings it to front with defined actions. For example put a window in front by double-clicking in it and send it back with the middle mouse button. Any keyboard or mouse event can be trapped. Number of required actions can be changed (double-click vs triple-click). Implemented as a commodity. Requires AmigaOS 2.0. This is version 1.03. Includes german version and source. Author: Stefan Sticht	<b>ChangeColors</b>	A new palette tool to change the colors of the workbench or any other public screen. The feature of this tool is its font independence; it uses the font of the screen on which it opens, instead of insisting on topaz 8. Looks really great if you use any other font than topaz on your workbench screen. This is version 1.02. Includes german version. Binary only. Author: Stefan Sticht		
<b>Fred Fish Disk 488</b>	<b>Automata</b>	Automata is an extremely versatile, cellular automaton simulation. Virtually every aspect of the simulation can be altered, saved, and later recalled. Also supplies many powerful editing functions (such as patterns, rotations, reflections, etc) for creating and modifying cell configurations. Additional features include editable icons, an immense variety of rules from which to choose, "music" which changes as the cell configuration changes and methods to speed execution from 3 to 60 (or more) generations per second. Binary only. Author: Jerry Mack	<b>Connex</b>	A "connect-4" type game. Shareware, binary only. Author: Adrian Millett	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver
<b>MkBmap</b>	<b>MkBmap</b>	Builds Amiga format bitmapped fonts from PostScript fonts. Uses the library "post-lib" (disk 488) to render the characters. Best results are obtained with fully hinted type 1 fonts, such as those supplied by Adobe and other vendors. Version 1.0, includes source. Author: Adrian Aylward	<b>ScreenMod</b>	Allows you to modify most of the parameters of any screen structure in memory, including colors and viewmodes. Use -ful for PAL programs which open their screens low. Has a companion program to automate changes later. This is version 1.0, includes source. Author: Syd Bolton	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver
<b>SKSh</b>	<b>SKSh</b>	A ksh-like shell for the Amiga. Some of its features include command substitution, shell functions with parameters, aliases, local variables, local functions, local aliases, powerful control structures and tests, emacs style line editing and history functions, I/O redirection, pipes, large variety of built-in commands, Unix style wildcards, Unix style filename conventions, filename completion, and co-existence with scripts from other shells. Very well documented. Version 1.7, an update to version 1.6 on disk 381. Lots of new features and bug fixes. Binary only. Author: Steve Koren	<b>BulExchange</b>	An input handler to help left handed Amiga users. It reverses the function of the mouse buttons, so that the left button becomes the right and vice versa. Very small, uses only 168 bytes of memory. This is version 1.1, an update to version 1.0 on disk 483. Includes source in assembly. Author: Preben Nielsen	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver
<b>Fred Fish Disk 489</b>	<b>AmiCheck</b>	An easy to use, intuitive, friendly checkbook program. Allows you to enter your checks in a very natural style, giving you a running balance as you do so. Options include reconciling your checkbook, starting new registers with outstanding checks only, printing all, cleared, outstanding, or selected entries, and more. Version 2.0, shareware, binary only, requires AmigaDOS 2.0. Author: Jeff Hoag	<b>DeafLab</b>	A program which translates text into hand signs for the deaf. Can be used to directly communicate with a deaf person that has trouble reading text, or used as a teaching tool for learning handsigning. Version 1.7, shareware, binary only. Author: Gary Greighen	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver
<b>AntLemmin</b>	<b>AntLemmin</b>	Another great, humorous, animation from Eric Schwartz. This one was obviously inspired by the wonderful Lemmings game. Lasts a full two minutes and ten seconds. Requires at least 2 Mb of memory. Author: Eric Schwartz	<b>DeafLab</b>	A program which translates text into hand signs for the deaf. Can be used to directly communicate with a deaf person that has trouble reading text, or used as a teaching tool for learning handsigning. Version 1.7, shareware, binary only. Author: Gary Greighen	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver
<b>Recolor</b>	<b>Recolor</b>	A fully configurable icon recoloring tool that can swap or shift the colors of selected icons and truncate the depth of	<b>DeafLab</b>	A program which translates text into hand signs for the deaf. Can be used to directly communicate with a deaf person that has trouble reading text, or used as a teaching tool for learning handsigning. Version 1.7, shareware, binary only. Author: Gary Greighen	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver	<b>FreeFish Disk 498</b>	<b>CPalette</b>	A palette adjusting program that can be brought up on just about any screen, including HAM and EHB. Version 1.1, includes source in assembly. Author: Craig Leaver

**In Conclusion**  
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# And furthermore...

## NEWTEK'S VIDEO TOASTER AND THE AMIGA 3000 CLASH

There's been some controversy over installing a Video Toaster on an Amiga 3000. Although NewTek recommends using the Toaster with a 2000 or 2500 with at least 5 megabytes of RAM, word has it that it's possible to use the Toaster on the 3000 if you really want to spend extra money and cancel your computer's warranty. NewTek and Commodore are working closely together to solve the Amiga 3000/Video Toaster compatibility problem.

Apparently, the Toaster will not work with the enhanced Denise chip found in the Amiga 3000. Also, the Toaster doesn't fit inside the 3000 unless the metal on the back of the 3000's case is bent. Such a modification voids Commodore's warranty. Regardless, some 3000 owners are installing Toasters this way.

NewTek plans to release a software update which will be compatible with the enhanced Denise chip and Workbench 2.0. They hope that this update will be ready when Commodore makes the enhanced Denise chips available to 2000 and 2500 owners. The update should be available around the end of the summer, but there is no firm release date. No plans are in the works for a Video Toaster designed specifically for the Amiga 3000.

Below: Craig Schiller (left) and David Foss (right), employees of Micro Ed, edit the logo for the new Amiga TV show.



## UNIX/MULTIMEDIA CONFERENCE AT VIRGINIA TECH

Hundreds of faculty, students, staff and members of the Virginia Polytechnic Institute and State University attended an all-day technology conference, which was hosted by Commodore Business Machines, Inc.

"We felt an all-day conference was the best way to present and demonstrate the wide variety of Commodore's new educational technology," explained Jesse Bornfreund, product marketing manager of UNIX for Commodore. "Attendees were also able to meet and ask face-to-face questions with Commodore personnel."

It all began when Commodore, contending with Apple, IBM, and DEC, was awarded the UNIX contract for the Computer Science Department at Virginia Tech. "The conference is part of our ongoing support plan for major UNIX and education customers such as Virginia Tech," said Paul Calkin, director of UNIX and education marketing at Commodore. "It also demonstrates the support which organizations like UNIX International have for Commodore as a supplier of UNIX graphics workstations, and re-enforces our clear lead in multimedia workstations, including UNIX multimedia."

Discussions, seminars, and hands-on learning exhibits were only part of the conference. Although the campus uses Amiga UNIX systems, other Commodore Amiga products on display included "Struggles for Justice," a laser disc-based interactive courseware which uses maps,

biographies, simulations, time-lines, and historical footage to bring history to life, and the Mandala Virtual Reality system, which allows Amiga 2000 users to create and manipulate interactive video demonstrations on screen, as well as place themselves in the picture using a standard VCR camera.

Jamie Evans, director of computer facilities in the computer science department for Virginia Tech said, "The conference was a tremendous opportunity to educate not just the computer science department but the rest of the university as well, as to what is available to them through Commodore."

## MICRO ED ANNOUNCES MONTHLY AMIGA TELEVISION SHOW

Micro Ed Enterprises, the first and largest Amiga-only dealer in Chicago, is proud to announce a new, monthly half-hour television program for Amiga owners. "Amiga Users By the Lake" will air on Chicago Access Cable TV Channel 19 in the month of July or August. The show, which will cover all aspects of Amiga use, will feature Chicago-area users implementing the Amiga in creative applications such as video, graphics, desktop publishing, and MIDI/music. Other features will include a news segment of the latest products available, and a showcase of graphics, video, music, and other creative works.



Ed Saavedra interviews Charlie Russell of Commodore

Micro Ed has also provided other extras for customers. They offer classes three times a week on various Amiga subjects. Starting in July, monthly support groups focusing on graphics, video, MIDI/music, and desktop publishing will meet on a different Saturday within the month. Ed Saavedra, president of Micro Ed Enterprises and the man behind it all, has been selling Amiga computers since they came out in 1985. Saavedra has owned Micro Ed Enterprises since April of 1988 and is dedicated to and focused on the Amiga video market.

Anyone that would like to share his creative work with Amigans throughout Chicago, or possibly throughout the country, is invited to submit it to Micro Ed Enterprises. There may be plans to offer "Amiga Users By the Lake" in VHS videocassette format for non-local viewers. For more information, contact: Micro Ed Enterprises, 444 N. Orleans St., Chicago, IL 60610, (312) 245-0066.

•AC•





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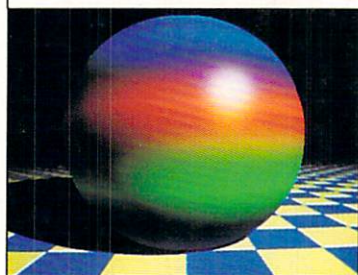
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